Arizona Health Education Centers
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Poster Presentation

THE UNIVERSITY OF ARIZONA
Arizona AHEC
Area Health Education Centers

A Community Assessment of Benson, Arizona

Badger, P., Boer, E., Bond, M., Fisher, J., Koulong, J., Walker, J., SAAHEC Scholars 2022-2024 & Johnson, L. (Mentor).

INTRODUCTION

The purpose of this presentation is to review a team-based community assessment identifying strengths, assets, and needs in the community of Benson, Arizona.

METHODS

Data collection methods included internet data collection, municipal/federal resources, and direct observation:

Primary Data Source:

- Community member interviews
- Windshield and walking surveys
- Review of community assessments

HISTORY & CULTURE

- Founded in 1880 around the Union Pacific Railroad station to export copper and silver from the surrounding mines.
- Established as a highway city in 1941.
- Benson is home to Kartchner Caverns State Park - named best cave in the nation by USA Today - which attracts thousands of visitors annually.

DEMOGRAPHICS

- Population: 5,355 residents.
- Average household income: $40,724
- Poverty rate: 14%.
- Median age: 50.5 years (49.1 years for males and 51.4 years for females).
- White: 84.83%, Two or more races: 8.69%, Native American: 2.26%, Black or African American: 1.21%, Asian: 1.15%.
- Home ownership rate: 66.3%
- Median gross rent: $731

EDUCATION

- Preschools: 4
- Elementary schools: 2
- Middle Schools: 2
- High Schools: 2
- Public District Schools: 1
- Higher education: 1
- Top best high school: Benson High School (BHS), ranked 167th in Arizona.
- Benson High School is 1 out of 3 high schools in the Benson Unified School District.
- BHS Scorecard: Mathematics Proficiency- 44%, Reading Proficiency- 45%, Graduation Rate- 95%.

PHYSICAL ENVIRONMENT

- Many dated, vacant, and run-down homes
- General appearance is clean
- Building off of Ocotillo Rd. and I-10 appeared to be barely standing after a fire
- Air was clean smelling (unpolluted)
- Green areas present throughout the town such as parks
- No stray animals were encountered
- Several RV parks
- Some neighborhoods had small lots with homes close together
- No lakes or ponds were seen
- Railroad tracks divide town

VALUES & BELIEFS

- Numerous Christian churches present
  - Catholic
  - Lutheran
  - Seventh-Day Adventist
  - Protestant
  - Latter-Day Saints (LDS)
- Veterans Memorial
- Vast community involvement & participation in local events & activities
  - School Sporting Events
  - Rodeo
  - Holiday Festivals

ECONOMICS & NUTRITION

- Produce on Wheels Without Waste
- Community food pantry
- Grocery stores:
  - Safeway
  - Walmart

- Projected to be the city with the largest growth in Cochise County by 2050.
- Central to trade routes (I 10, SR 80, SR 90, Union Pacific Railroad).
- Increased residential and retirement community developments.

SAFETY & TRANSPORTATION

- Benson Area Transit (BAT)
  - Fixed route & Dial-A-Ride
- Greyhound Bus service
- Benson has the only AMTRAK passenger station in Cochise county
- ViCap (Volunteer Interfaith Caregiver Program) transportation assistance
- Benson Police Department
- Benson Fire Department (volunteer)

According to a survey conducted in 2017 by Cochise County involving over 2,300 participants:

Top 5 health problems

1. Substance abuse
2. Cancer
3. Mental health
4. Aging
5. Diabetes

Top 5 risky behaviors

1. Drug abuse
2. Alcohol abuse
3. Being overweight
4. Poor eating habits
5. Lack of exercise

HEALTH & SOCIAL SERVICES

- Considered a medically underserved area
- One hospital/ED (Benson Hospital) with affiliated clinics in town
- Chiricahua Community Health Center
- Southeastern Arizona Behavioral Health Services (SEABHS)
- Community Bridges Inc.
- Medical marijuana dispensary
- Several physical therapy centers
- 3 gyms
- 2 dental offices
- 4 pharmacies

SUMMARY

Assets

In an interview with Benson Mayor Konrad and Mrs. Konrad from the Unified School District:

- Most community members are willing to be involved
- They have 2 food assistance programs in Benson
  - Produce on Wheels Without Waste
  - The Community food pantry
    - The food pantry tries to do a fundraiser at least every other month to assist the community.
- Benson recently got a new Chief of Police who they are seeing have more involvement in the community and are willing to help. He recently facilitated a grant for two school resource officers.
- The school district is Title I and receives funding to assist with after school programs
  - They offer alternative schooling methods such as charter and online education

Limitations

- Median income that is lower than the state average
- Limited career opportunities
- Adequate access to healthcare services

Recommendations

Benson Hospital 2020-2022 Assessment and 2017 Cochise County Assessment:

1. More career opportunities
2. Healthy, flourishing economy
3. Mental health and ETOH/substance abuse
4. Healthy eating, obesity, diabetes

CONCLUSION

Benson is a medically underserved area and faces many challenges as a rural city. Benson's community cohesion, assets, and momentum towards growth will greatly assist in the development and implementation of resources and solutions around the community's needs.

REFERENCES

ACKNOWLEDGEMENTS

THE UNIVERSITY OF ARIZONA Arizona AHEC Area Health Education Centers

A Community Assessment of Cocopah Community

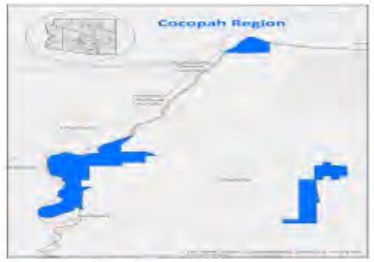
WAHEC Scholars 2022-2023

Anna Cantrell, Esteban Flores, Gabriela Flores, Mandy Gann, Israa Hegazy, Tiffany Kidd, Kathryn King, Allison Leung, Amy Ong, Krysten Provencio, Matthew Rohler, Frank Rosenberg, Anthony Smallcanyon, Ny'Kol Turner, Corinne Winsten

INTRODUCTION

This presentation is related to the Cocopah Indian Tribe Community, also known as the River People, within Southwest Arizona.

The Cocopah Indian Tribe, land base is approximately 9.4 square miles with 6,500 acres along the lower Colorado River (Cocopah Indian Community Profile 2012). The Cocopah reservation is divided into 3 reservations: North, West, and East.



Map of the FTF Cocopah Tribe Region boundaries within Yuma County

Demographics

The Cocopah Indian Tribe comprises approximately (First Things First, 2022):

- 1,206 enrolled members
- 857 adult members and 46 children under 6 living on the reservation
- Median age of the tribal population is 40.6 (US at 38.8).
- English is identified as Primary Language
- Spanish and Yuman are Secondary Languages

Community Health Status

The health status of the Cocopah Indian Tribe is protected by Indian Health Services (IHS). Here are some health statistics available to the public

- 11 births per year
- 21% without health care coverage
- 18.7% disabled
- All children enrolled in Head Start are up to date on all vacciners (2015-2017)
- 24 non-fatal emergency room visits.
  - Most common reason = falls (25%)

PURPOSE

The purpose of this community assessment is to coordinate with the Cocopah Nation to learn about the community's history, culture, environment, resources, and unique needs in order to effectively implement supportive assistance.

Method

To accomplish our goal, we employed a participant observation method of information collection. Utilizing our experience of the reservation through a guided bus tour and noting our findings we conducted an analysis of our results pertaining to the Cocopah Tribe focused on:

- Chronic Disease
- Hospitalization
- Insurance Rates for members of the Cocopah Tribe
- Access to resources

Cocopah Museum and Cultural Center Located in Somerton, AZ

Communication

In rural areas availability of methods for communication can make a great difference, especially when it pertains to population health. Lack of internet access/smartphones greatly limits access to telehealth options and other healthcare related information. This was especially impactful early in the COVID-19 Pandemic as in-person health services and stay at home orders further reduced access to care.

- 63% of households have a computer with internet access
- 48% of households have both smartphone and computer
- 20% of households do not have a smartphone or computer

YRMC Community Health Needs Assessment

Primary Concerns of patients within Yuma were

- Access to healthcare services
- Barriers to entry
- Primary care physician ratio
- Source of ongoing medical care
- Routine medical care
- Seeking medical care in Mexico
- Eye examination

Opportunities for Care

Medical Centers located close to Cocopah Reservation are :

1. Fort Yuma Indian Health Services
2. Yuma Regional Medical Center
3. Center for Regional Border Health

Cocopah Health Clinic

Safety and Transportation

- Personal vehicles in various states of repair
- Tribal vehicles reserved for disabled or elders to get to and from medical visits
- Cocopah has their own police station as they govern themselves
- Fire and Emergency Medical Services (EMS) through Somerton, AZ.

SUMMARY

Strengths:

- Strong community ties
  - Traditional practices
  - Cultural Center
  - Social support systems
- Head Start education program
- Community activism

Areas of Opportunity:

- Access to reliable healthcare that is within a reasonable distance and covered by IHS
  - Health concerns: Diabetes, Heart Disease, Substance Use Disorder
- Recreational centers
- Access to nutritious food options
- Public Transportation
- Access to water

Conclusion: The Cocopah people have a long history of rich cultural traditions and community strength. They are actively working to improve conditions on the reservation in relation to community health, transportation, environmental resources, and more. We are honored to be learning alongside this community and aim to follow their lead in a supportive partnership roll over the next year.

References

THE UNIVERSITY OF ARIZONA
Arizona AHEC
Area Health Education Centers

A Community Assessment of Nogales, AZ

Southern Arizona AHEC Scholars 2022-2024: Balderas, D., Frock, K., Jackson, S., Loya, E., Marcell, N., Meyer, B., Ortiz, K., and Unamba, K.
School Affiliations: Northern Arizona University and The University of Arizona, Faculty Advisor: Dr. Nancy Johnson

INTRODUCTION

The purpose of this presentation is to discuss the strengths, weaknesses, and areas of opportunity within the community of Nogales revealed during a community assessment. The overall goal is to identify the community's most important healthcare issues and needs and develop a community project that will benefit the people of Nogales.

View of the Mexico-US border with Nogales, AZ on the left
https://commons.wikimedia.org/wiki/File:View_of_Nogales,_Sonora,_from_Nogales,_AZ.jpg

ABOUT NOGALES

Nogales is a historic trade route dating back to the 1690s, once known by the name "El Camino Real." Today it is known by the name "Nogales" for the abundance of walnut trees in the area, and remains an important port of entry between Mexico and the US for international trade. Proximity to the Mexican border lends the area a rich cultural heritage.

METHODS

Windshield Survey

Carried out in December 2022 via vehicle and on foot, spanning the major town centers and residential areas of Nogales, as well as the major health centers of the community, including **Holy Cross Hospital** and **Mariposa Community Health Center**, where we spoke with community leaders about community resources and needs.

Data was also collected from federal census data and recent community health assessments by Holy Cross Hospital and other local health organizations.

Online Survey

A community survey consisting of a 24-item questionnaire was distributed to various community stakeholders. The survey included questions with multiple choice-answer formats on topics such as access and utilization of primary, emergency, women/child, mental health/substance use, and telehealth services; and short-answer format questions about the community's strengths, weaknesses, and needs. The survey was in English with a Spanish translation. A total of 133 responses were gathered from January 16 to February 28, 2023.

FINDINGS

Demographics

- Population of 19k people
- 94.8% of the population of Nogales identifies as Hispanic
- Approximately 14.4k identify as white and Hispanic, while 2.4k identify as two or more races, and 1.9k identify as other races.

Economics and Income

- Households in Nogales have a median annual income of $31,997 - largest share of households has an income less than $10,000
- Tucson households have a median annual income of about $45,227
- National median annual household income averages about $64,994 - largest share of households on a national level have an income between $75k and $100k

Education

- Three Title 1 local major k-12 schools with free/reduced lunch and weekend meal service
- New provisional community college associated with Pima Community College and UA

Housing

- Residential areas are disbursed from the southern border and throughout the outskirts of the city
- Mix of low and mid to high income homes, built in 70s-90s
- Many are built on hills to protect from flooding
  - Problematic for elderly and disabled residents

https://commons.wikimedia.org/wiki/File:Nogales,_Arizona.jpg

Transportation

- Bus/Shuttles
  - Local bus $1.50 one way
  - Premier and Natty shuttles run to the border - Tucson - Phoenix - Douglas
- Taxi
  - More limited/expensive compared to Tucson & Phoenix
  - $500 annual mandatory inspection fee per taxi in Nogales
- Nogales Rides
  - Free transportation within city limits to seniors, disabled, special needs, and individuals with disabilities

Recreation

- Teyechea Park, Anza Park, and the recreation center
- Two public swimming pools
- Winter Youth Hoops at the recreation center
- Boys and Girls Club of Santa Cruz County
- Coronado National Forest, Mt. Wrightson Wilderness, Pajarita

COMMUNITY RESOURCES

Mariposa Community Health Center

- Mental health services/Behavioral health clinic *(new)*
- Women Infants Children Center (WIC), Pediatrics, and OB/GYN
- Adult/internal medicine
- General surgery
- Telehealth services and equipment on campus
- Medication-Assisted Treatment (MAT) clinic
- Platicamos Salud program
- Teen Health Facilitators program

Mariposa Community Health Center
https://thenonfiction.arizona.edu/blog/border-city-nogales-welcomes-telemedicine-service

Holy Cross Hospital

- STEMI program with helicopter transport *(via Rio Rico)* to Carondelet in Tucson
- General medical/surgical services
- 24- hour emergency care and OB/GYN coverage
- 25- bed critical care
- Sexual Assault Nurse Examiner (SANE) service *(new)*

Southeast AZ Health Education Center

- Health education on the Arizona/Mexico border
- Training of Community Health Workers (CHW)
- Vacunas Para Todos - COVID education for migrants addressing vaccine hesitancy, how, & where to get vaccinated

Mental Health Resources

- Pinal Hispanic Council
- Constructing Circles of Peace
- Intermountain Mental Health Clinic
- Bejarano Counseling Services

Resources Outside of Medical Settings

- Domestic Violence shelter & victim resettlement program
- Homeless shelter
- Promotores
- Food voucher program
- Small garden classes

Community Outreach

- Fire Department offers CPR and fire prevention courses to high schools and the public
- Police Department offers Drug Abuse Resistance Education (D.A.R.E.) program and Coffee With a Cop

SURVEY RESULTS

Of survey respondents:

- as many as 21% obtain healthcare information by word of mouth and 20% from online sources, while 31% are unsure how to obtain this information.
- 84.2% report use of mental health/substance abuse healthcare services but only 72.9% feel they have adequate access to these services. 80.5% report substance abuse is a major issue in the community and 84.1% feel mental health issues are common in the community.
- 57.9% report using women and children healthcare services 1-2 times per year, and 78.9% feel they have appropriate access to these services.
- The most frequently reported concerns in the free response included "lack of resources," "limited clinic hours," "difficulty getting an appointment," and lack of information on "where to look for help."

CONCLUSION

Community Strengths

Nogales is a tight-knit community that is family oriented & communicates through word of mouth and personal connections. There is significant internal support from the community & current available resources exist because of this.

Areas for Improvement

- Lack of resources or awareness about available resources
- Lack of public transportation
- Lack of recreational programs for elderly and youth
- Lack of specialty healthcare services
- High provider-patient ratios
- Difficulty getting appointment or limited clinic hours
- Resource-sharing among healthcare organizations
- Patient Education

Intervention Plan:

Focus on integrating local resources to improve patient education & awareness about available resources so they may be better utilized.
Strategies include:

1. Help promote an existing **community health fair.**
2. Work with community leaders to create a **Resource Pamphlet** for distribution during the community health fair.

REFERENCES AND ACKNOWLEDGEMENTS

Arizona AHEC
NAU NORTHERN ARIZONA UNIVERSITY
SCAN ME

Community Assessment of North Yavapai County (Prescott, Chino Valley, & Paulden)

Balea, R., Binz, M., Bobadilla, R., Calvillo, E., Estrada, A., Fonseca Moreno, M., Hale, A., Jensen, A., Langendorf, T., Lyons, L., Muench, H., Odina-Herbert, K., Raban, S., Rangel, M., Sites, K., & Snyder, E. (2023).

Central Arizona Area Health Education Scholars Program with Dr. Suganya Karuppana, Faculty Mentor

INTRODUCTION / PURPOSE

The purpose of this presentation is to report the results of a team-based field experience in Prescott, Chino Valley, and Paulden, AZ, as a means of identifying the regional issues, and population-targeted healthcare needs.

HISTORY

Founded in 1864, **Prescott** was an area for the mining and cattle industry, but has recently became a site for tourism

Chino Valley was founded in 1970 and was a site for agricultural farming, ranching, and the dairy industry (Chino Valley Chamber of Commerce, n.d.)

Paulden is a census-designated city; therefore, it does not have a legally defined boundary or a governmental structure (Hometown Locator, 2022).

METHODS

Data collection based on community reports, observations, discussions with community members, online resources, and community assessments.

COMMUNITY DEMOGRAPHICS

	Prescott, AZ	Chino Valley, AZ	Paulden, AZ
Population	46,833	13,932	5,367
Travel Time to Work (avg.)	16 minutes	32.3 minutes	35 minutes
% in Poverty	11.2%	3.6%	14.1%
Med. Household Income	$61,090	$96,893	$39,971
Racial Background	87.6% White 0.4% Black or African Amer. 8.0% Hispanic 0.6% Native Amer. 2% Asian	88.6% White 0.47% Black or African Amer. 0.7% Native Amer. 1.7% Asian	83.3% White 0.0% Black or African Amer. 0.8% Native Amer. 0.3% Asian
Age	Under 5 yrs 2.3 % Under 18 yrs 11.8% Over 65 yrs 33.3%	Under 5 yrs 4.0% Under 18 yrs 16.2% Over 65 yrs 28.8%	Under 5 yrs 2.1% Under 18 yrs 24.1% Over 65 yrs 23.3%
Sex	Female 51.3 % Male 48.7 %	Female 36.6% Male 63.4%	Female 37.0% Male 63.0%

FINDINGS

COMMUNITY DESCRIPTIONS

Our focus community is North Yavapai, specifically the cities of Prescott, Chino Valley and Paulden. From our window surveys, we found Chino Valley and Paulden to be subjected to the most challenges regarding resources, access to care, and living and community conditions. Prescott offered greater access and quality in the way of food, road conditions, healthcare facilities, activity resources, public transportation, and utilities. However, all three cities had increased availability to smoke shops and only two main colleges located in Prescott with over 2000 students serving all three cities, approximately 15 miles away from Paulden and Chino Valley. Both Paulden and Chino Valley struggled with access to quality food (food deserts), transportation, healthcare and emergency facilities, parks / recreation, and safety measures.

COMMUNICATION

- 93.6% households with a computer in Yavapai County
- 87.6% households with broadband internet subscription
- Majority of multi carrier cellular service and internet coverage is in Prescott
- Decreased access to communication via internet, phone, or television in the communities
- A number of non-profit and faith based organizations exist to serve low-income or otherwise underserved populations
- Community members are the greatest resource

NUTRITION

- 41 grocery stores in Yavapai County
- 17.7% Adult obesity rate in Yavapai County
- Prescott farmers market on Saturdays
- Nutritional assistance for residents in need include: Supplemental Nutrition Assistance Program (SNAP), Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Yavapai County Commodity Supplemental Food Program (CSFP), and Prescott Community Cupboard Food Bank

SAFETY & TRANSPORTATION

- Yavapai Regional Transit offers safe public transportation, though not often used by locals
- Appropriate road conditions in Prescott; good signage
- No public transit in Chino Valley or Paulden
- 1 in 224 = Risk for Violent Crime Victimization (Prescott)

ASSESSMENT DATA

Between 2011-2021, Prescott's population grew from less than 40,000 to nearly 47,000. Now, it is ranked 26th in Arizona's most populated cities.

PHYSICAL ENVIRONMENT

- Rural and forested area with granite mountains
- Variety of infrastructures and establishments, ranging from modern and residential to mobile home communities
- Socioeconomic status and geographic location affects access to transportation and amenities
- Bike lanes available on larger, busier roadways, which can be a potential traffic hazard
- Low walk-ability to public destinations
- No parks, recreation, or trails seen in Chino Valley / Paulden

ECONOMICS

- 48.9% in civilian labor force who are 16+ years of age in Yavapai County (U.S. Census Bureau, n.d.)
- Healthcare and social assistance industries reflect the majority, while retail trade and educational services account for the second and third largest majority
- Most lucrative industries: Agriculture, Forestry, Fishing, and Hunting
- Most lucrative individual occupations: Legal, Business and Financial operations, Computer/Mathematical, Installation, Maintenance and Repair, and Healthcare Practitioners

ELECTRICAL SERVICE

- Main provider of electrical services for Yavapai County is Arizona Public Services (APS)
- Prescott has approximately 24,220 housing units
- Average monthly bill is $137.95, which equals approximately $1,655.40 per year (Reese, 2022)
- APS Energy Support Program offers 23% off the monthly energy bill if certain requirements are met
- Crisis Bill Assistance can help customers with up to $800 per year for utilities assistance
- Project SHARE provides customers up to $300 in assistance
- Arizona Department of Economic Security (ADES) offers the Low-Income Home Energy Assistance Program (LIHEAP) and Emergency Rental/Utility Assistance program, to help low-income families with utilities and housing needs (AZS, n.d)

SUMMARY AND ANALYSIS

The Social Determinants of Health (SDOH) between Prescott, Chino Valley, and Paulden are wildly evident to even the most novice healthcare professional.

STRENGTHS

Prescott has several advantages over Chino Valley and Paulden

- Medical facilities: hospitals, community health center, primary care clinics, mental health
- Grocery stores and farmers markets, food banks
- Public transportation
- Primary, secondary, and tertiary education facilities
- New mental health services opened in spring of 2023

WEAKNESSES

- Food deserts and food swamps in Chino Valley and Paulden
- Chino Valley (one primary care); Paulden (no medical facilities)
- No public transportation in Paulden
- Poor cell phone reception in Chino Valley and Paulden
  Spotty cell phone service in Prescott

CONCLUSION

Chino Valley and Paulden are both rural underserved communities whose populations experience grave deficits in their SDOH. These deficits contribute to poor health outcomes for all ages, from birth to death. Access to primary and mental healthcare are limited by the poor reception and subsequent isolation of these communities. There is a great need to address access to healthcare and public transportation in Yavapai county.

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Dr. Suganya Karuppana, CA-AHEC Mentor

REFERENCES

Scan the QR code for reference list

THE UNIVERSITY OF ARIZONA Arizona AHEC Area Health Education Centers

CAHEC Central Arizona Area Health Education Center

A Community Assessment of Sierra Vista, Arizona

Molly Ament, Amber Brewer, Alicia Garcia, Caleb Owens, Ian Pieroni, Jill Quillman, Nim Sidhu, Peri Tohm, SAAHEC Scholars 2022-2024

INTRODUCTION

This poster was representative of a community assessment of Sierra Vista, Arizona. It served the purpose of reporting and evaluating the results of the windshield survey and interviews with key stakeholders in the community in order to highlight the strengths and areas for opportunity in Sierra Vista.

HISTORY & CULTURE

While the city of Sierra Vista was founded in 1956, it's rich military history can be traced back much further. Fort Huachuca was established in 1877 and played a significant role in the Indian Wars of the 1870's and 1880's. Fort Huachuca was also home to the 10th Cavalry also known as the "Buffalo Soldiers". Many original military buildings and officer's homes are still standing today inside of Fort Huachuca.

Sierra Vista worked hard to preserve its history and was home to two museums. One was the Fort Huachuca Historical Museum which houses information on the United States Army in the Southwest. The other museum was the Henry H. Hauser Museum, run by the City of Sierra Vista, that contained rotating exhibits and exhibits about the early pioneers of Sierra Vista.

in Cochise County, loocated 16 miles northeast, was the famous wild west town,Tombstone. Additionally, 30 minutes southwest was the historic mining town of Bisbee.

Sierra Vista has a large population of active duty military plus their families as well as retired individuals in the community.

PURPOSE

The purpose of this presentation is to report the results of a team-based field experience in Sierra Vista.

METHODS

Primary Data Sources

- Engaged in interprofessional meetings to learn about social determinants of health in order to apply key concepts to the windshield survey
- Interviewed key stakeholders in the community
- Interviewed community members
- Engaged in a walk-through of the community

Secondary Data Sources

- Sierra Vista government website
- Census data

WINDSHIELD SURVEY

The two houses depicted are examples of the stark differences in housing seen in Sierra Vista

Art at local park

Strip Mall (commonly seen); some with vacancies

Canyon Vista Medical Center

FINDINGS

Demographics

- According to the 2020 US Census, Sierra Vista had a population of 43,308 and was growing annually by 0.31% per year.
- Sierra Vista had a predominantly caucasian/white population at 70.9%. The second largest racial/ethnic group were individuals who were Hispanic/Latino. The third largest racial/ethnic group were individuals that identify as as two or more races at 13.2%.
- Sierra Vista had a large military presence due to Fort Huachuca with 2,600 active duty military personnel and 8,028 veterans in the area.

Economics

- Some of the main industries in Sierra Vista were military and defence (+ cyber security), retail, education, tourism, & healthcare.
- The median household income according to 2020 Census data was $66,129/year and the per capita income was $34,651/year
- Persons in poverty: 11.1% of the population

Housing

- Stark differences between homes and neighborhoods in Sierra Vista
- Median household value (2023) is $300,000 and the market has trended up 12.8% over the last year.
- Median rent is $1,199/month (43% less than the national average). This time last year Median rent was $750/month.

Health and Community Resources

- Many of the highlighted resources on the poster were identified based off of community needs identified by members of the community, or key stakeholders.
- Sierra Vista was suffering with a large homeless problem and there were few resources to help people in need of shelter or food. These were Catholic Community Services, the Good Neighbor Alliance, and the Community Food Bank of Southern Arizona.
- The majority of churches were Christian or Catholic and there was a total of 66 surveyed. Many of the religious organizations had some sort of community outreach program.
- There were many programs for children through the city or school and were some community improvement programs.
- Sierra Vista had an abundance of grocery store chains, fast food restaurants, and other retail stores.

Environment

- Nestled in the southeast portion of Cochise County and south of Huachuca City, Sierra Vista was roughly 152 square miles.
- Sierra Vista fell within the cold semi-arid climate of mid-altitude Arizona.
- There were 5 well-maintained parks, over 13 exercise-type facilities, and many outdoor recreation opportunities.
- Bus services were closed due to low staffing and Paratransit was available to persons with disabilities. Transportation was overall mostly observed personal vehicle. There were taxi and airport shuttle services available.

SUMMARY, ANALYSIS, & RESULTS

Areas of Strength

- Sierra Vista had beautiful scenery, weather, and was the Hummingbird capital of the United States.
- It was a quiet area and overall a nice place to retire for older adults.
- There were many activities for older adults, or young children, especially at the public library.
- Sierra Vista had well maintained parks, plenty of gyms, and opportunities for hiking.
- There were many grocery store chains and strip malls containing shopping resources for residents.

Areas for Opportunity:

- Active duty military and veterans had difficulty getting medical attention, even on base.
- There was an overall shortage of medical staffing, specifically maternal and women's health services.
- Most residents were commuting to Tucson for better quality of care and more variety of care.
- There was a lack of things to do, boring night-life, for young adults to middle-aged adults.
- Commercial buildings had many vacancies which could be due to overall lack of industry.

CONCLUSIONS

The survey found there to be an economic disparity shown by the increased cost of housing, but low income status of most individuals. There was a large homeless population in Sierra Vista not accurately described by the data available. Additionally, a lack of healthcare resources was identified as most residents travel to Tucson for healthcare needs. Through grant-based assistance and community programs, like SAAHEC, it is hoped to bring positive change to the community of Sierra Vista.

REFERENCES

SCAN ME

THE UNIVERSITY OF ARIZONA
Arizona AHEC
Area Health Education Centers

A Community Assessment of Vail, Arizona

Jimenez-Celaya, M., Krebs, K., Kronenberger, C., Kuretch, J., Litz, K., Maynard, K., Melendez, K., & Valenzuela, L.
SAAHEC Scholars 2022-2023 & Dr. Johnston, L. (Mentor)

INTRODUCTION

Vail is a growing, unincorporated community located southeast of Tucson, Arizona. The heart of the Vail Community is their prestigious and highly awarded Vail School District which is one of the top school districts in Arizona. Vail has many different resources, such as a food bank, fire departments, postal services, and health care clinics in and near the area. However, Vail is a large area where those on the outskirts are a lot farther from important resources and even the schools deal with many issues. Many of these issues include mental health access to students and adults in the community, healthy food options, and lack of primary care physicians.

HISTORY

- The Vail name came from the famous brothers Walter and Edward Vail, who arrived in the area by the late 1800's to become successful businessmen and ranchers.
- Vail was commissioned by Pima County to be a town in 1893.
- Vail was a cattle-shipping center and a storage center forore from the Helvetia Copper Mine

PURPOSE

The purpose of this presentation is to report the results of a team-based field experience in the Vail community as well as to highlight the strengths and identify areas for improvement.

METHODS

- Internet data collection using census data and other federal and municipal resources.
- Interview with Mr. Matt Beem who is the Assistant Principal Dean of Students, Safety Director, Resource Educator, Special education, Student Achievement, Inclusion Specialist, and Counselor Specialist for the Vail School District. (10/06/2022)
- Community observation and needs assessment data collection via social media presence: *Facebook Vail Group*
- Community windshield survey 11/05/2022
- Interview the event organizer at the Vail Health Expo for senior citizens (11/05/2022)
- Key informant interviews during the Vail Health Expo with senior citizens, medical groups, CAM therapies, food services, grieving, etc.

DEMOGRAPHICS

- Vail Population: 14,099
- Predominately White (88.9%)
- Average Age: 39.5 years old
- Around 2.95 persons per household

DEMOGRAPHICS	Vail	COUNTY	HEALTH PLANNING REGION	ARIZONA
POPULATION	19,429	1,052,375	1,287,024	7,294,587
Population Density	23.5	114.5	55.6	64.0
Persons By Age				
0-14	4,203	209,913	251,114	1,560,003
15-19	1,393	76,196	94,255	526,300
20-44	5,423	349,759	411,737	2,429,972
45-64	6,259	272,887	332,040	1,782,372
65-84	2,008	141,301	173,681	876,936
85+	146	21,120	24,787	119,773
Race/Ethnicity				
White	88.9%	77.3%	77.6%	76.7%
American Indian	1.1%	3.4%	3.4%	4.5%
Black	2.1%	5.6%	3.5%	4.2%
Asian/Pacific Islander	1.5%	2.0%	2.6%	3.1%
Other	6.4%	12.8%	12.9%	12.5%
Hispanic	15.7%	34.3%	30.1%	26.6%
Communities of Color	26.8%	48.2%	49.0%	45.3%
Gender				
Females	50.0%	50.9%	50.0%	50.3%
Males	50.0%	49.1%	49.4%	49.7%
Single Parent Families	11.8%	29.1%	28.6%	26.9%
Female Headed Households	3.3%	12.8%	12.7%	12.1%
Disability Population	12.2%	15.3%	15.3%	13.0%

ECONOMICS

US Census Bureau, 2021	Vail	National Average
Median Household Income	$107,470	$69,021
Per Capita Income	$40,615	$37,638
Owner-Occupied Housing Rate	92.3%	64.6%
Median House Value	$274,600	$244,900
Poverty Rate	3.3%	12.8%

FINDINGS

Community Health Resources

- United Community Health Center, Vail Valley Family Healthcare, Vail weight loss center, Vail internal Medicine, Dentists of Vail and a physical therapy clinic.

Communications

- "The Vail Voice" newspaper
- There is one main UPS post office, one annex post office, three collection boxes, and an amazon locker
- Various wireless communication services.
- Fast and reliable internet services

Safety and Transportation

- Two private fire departments (Rincon Valley Fire District and the Corona de Tucson Fire District)
- Pima County Sheriff's Department oversees law and order in the community.
- No public transportation, a typical household had two cars and most commute on average 31.1 min (compared to US average of 26.9 min).

Nutrition

- Many locally owned businesses
- Fast food options
- Grocery stores

ReSources Vail Food Bank

ReSources Food Bank

Provides food to low-income families, seniors, or individuals. Their services include:

- The Emergency Food Assistance Program (TEFAP)
- The Commodity Senior Food Program (CSFP).

Environment

- No parks and recreation centers
- Closest park is 12 miles away
- Vail school playgrounds are used as parks when open

SUMMARY

Strengths:

- The top performing school district in Arizona is the Vail school district
- Water quality/safe drinking water
- Appropriate waste management services (locally owned)
- Many new housing developments
- Reliable communication
- Strong sense of community
- American Legion for Veterans

Areas for opportunity:

- Lack of mental health resources, primary care physicians, and specialist care
- Fast-food options predominate/limited fresh food and healthy options.
- Lack of public transportation
- No nearby parks and recreation

CONCLUSIONS

Survey and interviews identified the primary area for improvement in Vail, AZ as access to mental health resources, especially in schools. The school district is a top performing school district in Arizona and is an optimal location for providing mental health resources. Through SAAHEC funding, it is the hope that a program could be implemented to provide mental health resources in the schools in Vail.

RESOURCES

ACKNOWLEDGEMENTS

- Mr. Matt Beem- Resource Educator, Special Education, Student Achievement, Inclusion Specialist, Counselor Specialist, Asst. Principal, Dean of Students, & Safety Director
- Del Webb Community at Rancho del Lago
- Paula Lyford, Bear Lyford, & Teresa Lespron Marrufo- Facebook group Administrators of Vail AZ Community Bulletin Board
- Dr. Lane Johnson (Mentor), Southwest Arizona AHEC

THE UNIVERSITY OF ARIZONA Arizona AHEC Area Health Education Centers

COMMUNITY HEALTH ASSESSMENT - SHOW LOW, AZ

AHEC Scholars '22-24: Erin Barreras, Miranda Braley, Reanna Draper, Delaney Jecmen, Lauren Jenkins, Peter Jones, Kyle Maxum, Kristine McCabe, Shawna Nelson, Natalie Nguyen, Shane Samuel, Madison Somero, Savannah Sparkes, Stephen Taylor, Amaya Webster, Tayla Wheeler

INTRODUCTION

Show Low is a city located in southern Navajo County at the base of the White Mountains of Arizona. This medically underserved population falls within the Colorado Plateau region of the Arizona Health Education Program (AHEC). This program supports a wide range of educational programs, as well as aiding students in professional roles to commit to working with these populations struggling for healthcare access. These programs reinforce the strength Show Low has in pursuing collaborative efforts to enhance their citizens quality of life and care.

The purpose of this presentation is to report the results of a team-based field experience in a rural community.

HISTORY & CULTURE

Show Low was established in 1876 by local rancher Corydon Cooley. As the result of winning an intense poker game, the town was named after Cooley's success by showing the lowest card. The town slogan goes, "The City Named by the Turn of a Card", and several town memorials commemorate Cooley's victory. Show Low was incorporated in 1953, and since has seen many changes–enduring a lot of growth. Prided by it's "small town feel", the community is very close knit- especially the Church communities. While 56.4% of the community does not practice a religion, 22.6% of the population practice Mormonism, followed by members of the Protestant (14.5%), Catholic (6.1%), Christian (0.2%), and other (0.2%) churches. Although Show Low is a small town, the residents welcome entrepreneurship. The growing number of small businesses are pushing to think outside the box, are hardworking, willing to take risks, and see rewards. The area is often frequented by tourists, especially in the summer. With its proximity to a plethora of natural attractions, hiking, kayaking, fishing, and hunting activities are enjoyed throughout most of the year. During winter months, snow sports are available just thirty minutes away from the city.

METHOD:

This community health assessment was accomplished and produced by the CPHCP AHEC Scholars. Our group gathered in Show Low on two separate weekends during the '22-23 academic year to survey, analyze, and collaborate on the health condition of community. Supplemental information in the city was provided by the ShowLow and Arizona Census Bureaus.

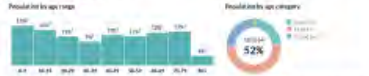
FIVE CORE COMMUNITY STRENGTHS AND OPPORTUNITIES

DEMOGRAPHICS - 11,623 residents

Show Low is a predominantly White (88.85%) community that has a current annual growth rate of 0.90%. The average household income in the city is $62,377 with a poverty rate of 19.29%.

The majority of the community has been born and raised in Show Low and raised *their own* families there. This community enjoys the small-town feel, strong family values, and a safe place where everyone supports one another in times of need.

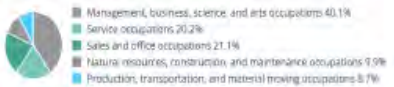
The median age of Show Low is 41.3 years, with almost half of the population being younger than 18, or over 65 years. Both child and geriatric care facilities presents one of Show Low's biggest opportunities for improvement, as a significant portion of the community is likely to need support.



ECONOMICS

- In Show Low the civilian labor force (16+ years) is at 52.8%.
- The top industry present is **educational services, health care, and social assistance. 40.1 %** of residents work in **management, business, science, and arts occupations**, while only **8.7%** work in **production, transportation, and material moving occupations**.

→ The Occupational diversity of Show is relatively low, as shown in the chart below:

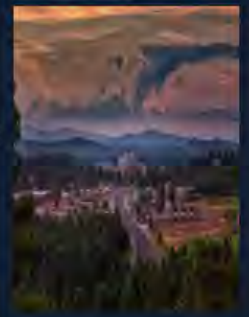


ENVIRONMENT

- Show Low is the largest city in the White Mountains, and sits at an elevation of 6,400 ft.
- The seasons are distinct in Show Low. The average annual rainfall is 17 inches. The average annual snowfall is 25 inches. There are 265 average annual days of sunshine
- There is a lot of greenery and natural beauty in Show Low. However the flora is overrun in some places and well kept in others. In the more affluent communities, the flora was more maintained.
- The government buildings and hospitals are updated and taken care of whereas the public areas such as schools, parks, and wellness facilities are less supported.

COMMUNICATION

- Internet usage is less utilized as compared to bigger cities due to less access to internet and providers available on public databases.
- The public library, city council, and health department are major sources of communication within Show Low; these places will have local postings that have information about local sports teams, health information, etc.
- The local board of education meets every second Thursday of the month and broadcasts the meeting to a local TV channel.
- The Church community is also very strong in Show Low, thus a lot of communication is passed during church activities.



AVAILABLE HEALTH PROGRAMS

- North Country Health Care - They have recently been expanding and renovating their facilities and resources. They have many resources and links on their website including a form to match patients to programs they qualify for.
- Child Care Administration - There is an office for the DES to work directly in the community, and provide childcare for a portion of the day. Some parts of the program require income eligibility requirements, or require that the guardians pay some of the costs.
- White Mountian Association For Victims of Domestic Violence Inc. - A S.A.F.E House program which provides shelter, care, and advocate for victims of domestic violence.
- Any many more!

SUMMARY

Strengths:

- Strong sense of Community
- High Tourism that supports the economy
- Access to Outdoor areas and activities
- Many assistance programs available for various areas of need
- Many healthcare options and facilities are available
- Safe Drinking Water
- Women's health support
- Children's after school education programs

Areas of opportunity:

- No official Homeless Shelters
- Expand transportation access to further areas surrounding Show Low, as accessibility to Healthcare can be difficulty when living far away from town.
- Add bus services on weekends.
- Increase number of Grocery Stores
- Increase the number of Providers for Geriatric and Pediatric patients.
- Limited number of day care centers offered in the area
- Broadband Internet Expansion

CONCLUSIONS

Show Low is located in a beautiful area that is able to satisfy the majority of it's residential needs. Its small town culture dually promotes and protects a strong sense of communal support that the residents enjoy. In recent years, the city has continued to grow rapidly, which has challenged the services sector to keep up. In regards to our AHEC mission, we have strived to identify and build initiatives that promote more access and quality of care to Show Low and the people who live there.

REFERENCES:

COLORADO PLATEAU
CENTER FOR HEALTH PROFESSIONS
AT NORTH COUNTRY HEALTHCARE

THE UNIVERSITY OF ARIZONA
Arizona **AHEC**
Area Health Education Centers

Analysis of Statistics Utilized in Primary Articles in a High Impact Journal: A Prelude to Practical Pedagogy in Biostatistics

THE UNIVERSITY OF ARIZONA College of Medicine Phoenix

Asahi Murata MS2, MPH, Emma Kar MS2, & Eric vanSonnenberg MD

Introduction & Background

- Biostatistics → increasing focus in clinical professions curricula and a topic on USMLE
- Clinicians in practice may not have received biostatistics training → likely can benefit from clarification and instruction of statistical methods

Objective

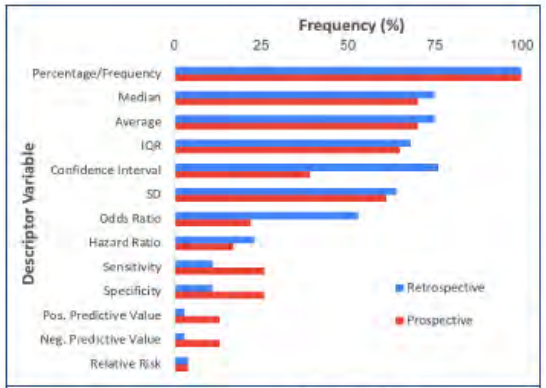
- Document and evaluate statistical methods in high-impact factor journal
- Develop a statistical guide that can be applied to facilitate interpretation of statistics for medical students and practicing clinicians

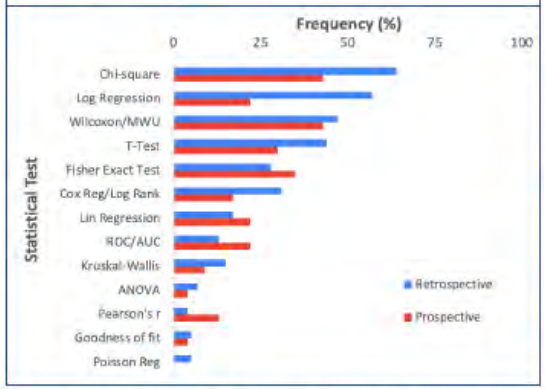
Materials & Methods

- Analyzed 100 most recent primary articles dating from November 2021 in *Journal of Intensive Care Medicine (JICM; IF 2.95)*
- Data extracted by 2 MS2s
- Data assessed for:
  - Study temporality & design
  - Types of descriptor variables & statistical tests
- Sub-group analysis:
  - Retrospective cohort vs prospective cohort

Results (see Figures 1, 2, & Table 1)

- Retrospective studies most common 75/100 (75%), then prospective studies 23/100 (23%)
- Cohort studies most common 81/100 (81%), then case series 9/100 (9%)
- Most common descriptors: percentage/frequency 100/100 (100%), median 71/100 (71%), average 71/100 (71%) & interquartile range 68/100 (68%)
- Most common statistical tests: Chi-square 59/100 (59%), logistic regression 48/100 (48%), Wilcoxson 46/100 (46%) & t-test 40/100 (40%)
- Retrospective cohort vs prospective cohort:
  Higher use of Chi-square: 44/63 (70%) vs 8/18 (44%)
  Logistic regression: 40/63 (63%) vs 5/18 (28%)





Figures 1 & 2: Frequency of descriptor variables & statistical tests between retrospective and prospective studies

Table 1: Subgroup analysis of descriptor variables & statistical tests in retrospective vs prospective cohort studies

Descriptor Variables	Retro, N (%)	Pros, N (%)	Statistical Test	Retro, N (%)	Pros, N (%)
Percentage/ Frequency	63 (100)	18 (100)	Chi-square	**44 (70)**	8 (44)
Median	45 (71)	12 (67)	Log Regression	**40 (63)**	5 (28)
Average	**48 (76)**	9 (50)	Wilcoxon/MW U	29 (46)	9 (50)
IQR	42 (67)	11 (61)	T-Test	27 (43)	6 (33)
Confidence Interval	**51 (81)**	9 (50)	Fisher Exact Test	20 (32)	4 (22)
SD	40 (63)	9 (50)	Cox Regression/ Log Rank	19 (30)	7 (39)
Odds Ratio	**36 (57)**	5 (28)	Lin Regression	13 (21)	5 (28)
Hazard Ratio	16 (25)	3 (17)	ROC/AUC	8 (13)	**5 (28)**
Sensitivity	7 (11)	**6 (33)**	Kruskal-Wallis	10 (16)	2 (11)
Specificity	7 (11)	**6 (33)**	ANOVA	**5 (8)**	0 (0)
Pos. Predictive Value	2 (3)	3 (17)	Pearson's r	3 (5)	**3 (17)**
Neg. Predictive Value	2 (3)	3 (17)	Goodness of fit	4 (6)	1 (6)
Relative Risk	3 (5)	1 (6)	Poisson Reg	3 (5)	0 (0)

Conclusions

- Retrospective & cohort studies → most frequent
- Chi-square test in majority of studies, particularly in retrospective cohort studies
- This statistical analysis should help training of medical students, practicing clinicians, & writers of scientific papers

Future Directions

1) Larger scale study, similar method
2) Practical guide on statistical methods for prospective writers

Acknowledgements

Thank you to Dr. vanSonnenberg for his guidance, support, and enthusiasm throughout this project.

PRESENTER
Meghan B. Skiba, PhD, MS, MPH, RDN
Assistant Professor

BACKGROUND

- Half of a person's health status is influenced by Social Determinants of Health (SDOH) and one-third to individual health behaviors.
- We developed and validated a novel Community Connected Classification (C3) to characterize regional positive SDOH factors evaluate health behavior associations

METHODS

Population level data from the American Community Survey and Behavioral Risk Factor Surveillance System

Final SDOH 'score' from PCA component named and cut into deciles to represent classifications

A C3 score of 10 indicates communities with greater connection (high) while a 1 indicates communities with greater privation (low)

118 zip codes with available complete data

Analyzed using STATA 17.0 and ArcGIS Pro

RESULTS

Communities with higher C3 scores: 1) have higher household income, 2) are above the federal poverty line, 3) are considered food secure, 4) have internet access, 5) attained higher education, and 6) have a primary care provider.

C3 when adjusted for demographics, technology access, and geography was significantly inversely associated with Southern Arizona population rate:

- **Obesity** (ß=-0.20; 95%CI: -0.35, -0.06)
- **Low fruit and vegetable intake** (ß=-0.35; 95%CI: -0.51, -0.19)
- **Physical inactivity** (ß=-0.32; 95%CI: -0.48, -0.16)
- **Smoking** (ß =-0.34; 95%CI: -0.62, -0.07)

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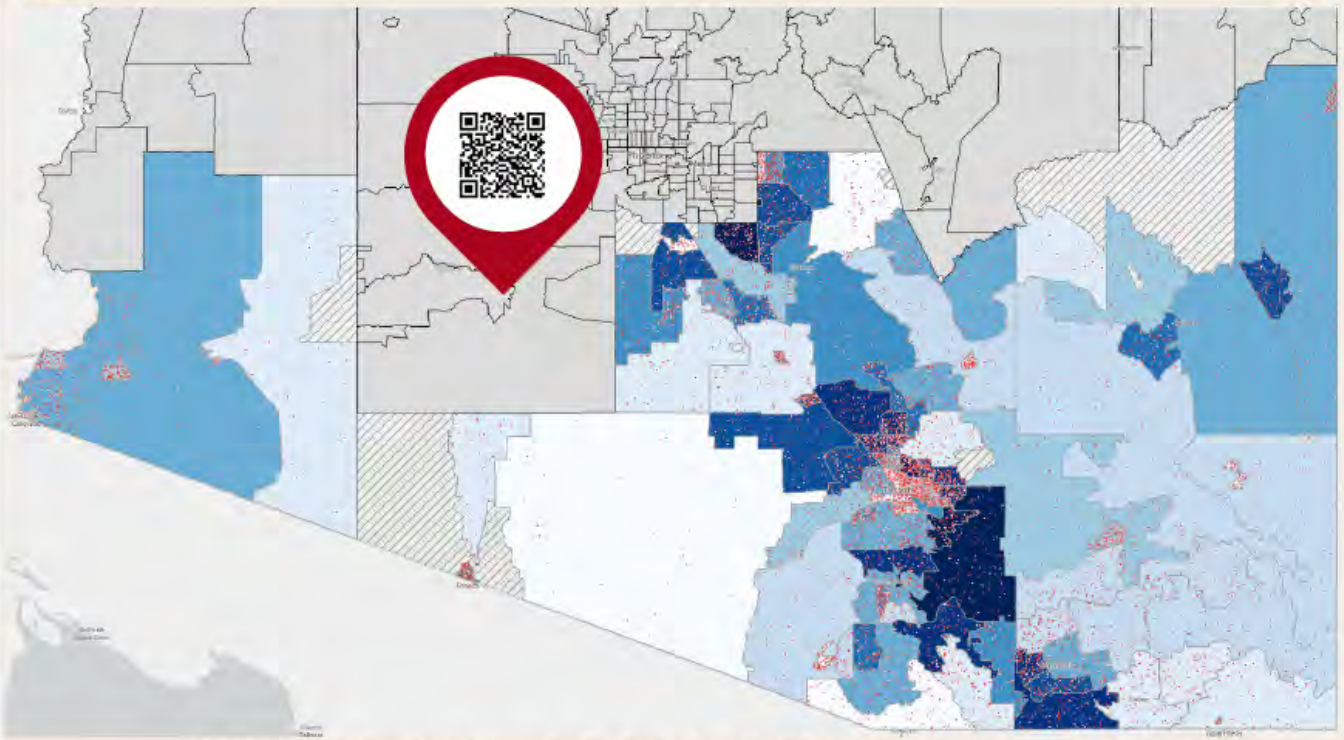
People engage in **more** health protective behaviors when they live in **connected communities.**



C3 Clustering in Southern Arizona by Zip Code: *Scan the QR code to view an interactive web-map*
Dark blue represents higher C3 values; light blue represents lower C3 values; red dots represent health behaviors

COMMUNITY CONNECTEDNESS CLASSIFICATION AND ASSOCIATION WITH HEALTH BEHAVIORS IN SOUTHERN ARIZONA: A GEOSPATIAL ANALYSIS

Meghan B. Skiba, Carlie Felion, Kimberly Lind, Christopher Krupnik, Chris Segrin

This research was supported by a Making Action Possible Grant awarded to Dr. Skiba from the University of Arizona Eller College of Management and the University of Arizona Cancer Center Behavioral Measurement and Interventions Shared Resource at the University of Arizona Cancer Center (P30 CA023074).

Average Daily Blood Pressure as a Measurement of Efficacy of a Telemedicine Intervention Among Tonto River Basin Residents with Hypertension

Sara Hurst, RN, BSN, FNP-Student

Northern Arizona University School of Nursing

Introduction

For the residents of the Tonto River Basin who have reduced access to care especially due to the flooding of the Tonto River, a telemedicine program is being implemented to increase access to health services.

Via remote monitoring of patient's vital signs and electrocardiogram combined with videoconferencing with healthcare providers, the aim is to reduce both the incidence of hypertension in the Tonto River Basin and to reduce cardiovascular risk via optimal management of hypertension in those already diagnosed.

Problem

High prevalence of hypertension – 1 out of ever 5 people with hypertension is adequately managed (Santos et al., 2022).

Poorly treated hypertension can lead to coronary artery disease, heart failure, renal failure, and stroke.

Treatment is straightforward, but the asymptomatic nature of the disease makes it difficult to treat.

PICOT Question

Will implementation of telemedicine for the adult residents of the Tonto River Basin with hypertension improve biomarkers of health compared to adult residents without implementation of telemedicine over the year?

Population

Individuals who:

- are at risk for developing hypertension and require screening
- need to rule out white coat hypertension
- are underserved and rural
- are immunocompromised individuals who may be at risk for infection
- require frequent monitoring because of poor adherence or poorly managed disease
- have significant physical limitations (Omboni et al., 2020).

Setting

Tonto Basin, AZ

Patient to clinician ratio 2,566:1

Median age 65 years old

Household Income $43,000

During monsoons or after snowmelt, the Tonto Creek floods cutting half of the residents off from access to services.

Review of the literature

- Cost effectiveness and improved patient satisfaction (Santos et al., 2022).
- 85 % of people had a reduction in systolic and diastolic blood pressures compared with standard treatment (Kalgara et al., 2022) and (Yatame et al., 2018).
- Positive impact of telemedicine on cardiovascular disease (Vilme et al., 2019).
- Uses for telemedicine include screening for hypertension, management of medically underserved populations, management of high risk, older adults, or those with multiple comorbidities (Omboni et al., 2020).

Best Practive

In rural areas where primary providers are in short supply, telemedicine greatly improves access to care.

Reduced costs can mitigate the negative impact of reduced reimbursement rates on small rural practices.

The proposed intervention would have a threefold outcome:
improvement of the overall health of the population of Tonto Basin
reaching patients who previously had no access to medical care and preventative services
gathering of information for the creation of a standard protocol for blood pressure management over a telemedicine setting

Blood pressure management is tricky if patients are seen only once a year.

A standard protocol for following up with patients and allowing them a role in their own care by checking their blood pressure from home, the goal is that a greater reduction in blood pressure.
The Starlink equipment being used will ensure that there are no calibration problems or potentially faulty equipment.
Patient participation will of course be voluntary, but with their feedback and data, the hope is to devise a useful tool for future generations of students and telemedicine users.

Conclusion

Remote patient monitoring with telemedicine enables healthcare providers to:

- provide services to patients at reduced costs to the patient and provider
- Provide care to the patient in the comfort of their own home
- allow for a more accurate assessment of blood pressure
- Mitigate infection risk
- Prevent the reduced access caused by physical isolation pf patients (in the case of the Tonto River flooding during monsoon season)
- Provide care to persons with physical disabilities who are unable to travel

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Hypertension in Primary Care

College of Health & Human Services
School of Nursing
Name: Jamie Biggers
Faculty Sponsor: Shelley Vaughn

Purpose of the Project

Hypertension is a global public health issue contributing to an increased risk of cardiovascular disease developing and the development of complications which can decrease quality of life and eventually death (Pierdomenico, et al., 2018).
Close to 1 out of 2 adults in the US (approx. 116 million) has high blood pressure, most (approx. 91.1 million) do not have their high blood pressure under control (Million hearts, n.d.)
Hypertension is the most important treatable risk factor for stroke (Centers for Disease Control and Prevention, n.d.)
The goal is to decrease the number of patients with uncontrolled hypertension seen at the clinic

Problem

The primary care provider is key in monitoring, diagnosing, managing, and educating the patient about their health and disease processes.

Hypertensive patients can fall through the cracks of the clinic system and follow up and management of high blood pressures may be overlooked.

Setting

Rural healthcare clinic located in Safford, AZ
Clinic has 5 family medicine doctors, 3 nurse practitioners, 1 physicians assistant
Patients come from the communities of Safford, Thatcher and Pima in addition to the small communities surrounding the Gila Valley

Patient Population

Patients seen at the clinic with uncontrolled hypertension by all providers in rural healthcare clinic in southeast Arizona
Uncontrolled hypertension of greater than 140/80
Age 18 and older

Clinical Question

•Can Primary Care use a team-based educational multi-visit approach to bring uncontrolled hypertensive patients into a controlled range?

Review of the Literature

•Medication adherence is crucial to accomplish and maintain BP control, but hinderances to optimal medication adherence are intricate and multi-dimensional, especially for rural patients (Wu et al., 2018).
•Examples of barriers for patients can be a lack of knowledge, stress, depression, and anxiety as explanations for delaying implementation of a healthier lifestyle (Ödesjö et al., 2019).
•In primary care one prominent healthcare provider barrier was discovered to be the acceptance of a BP level higher than the recommended target, another reason is also competing medical issues (Ödesjö et al., 2019).
•. Team-based care is superior to standard approaches (Ödesjö, et al., 2019).
•By ensuring the prompt detection and proper management of high blood pressure can contribute towards decreasing death and disability (Chukwuma, 2019).

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Proposed Best Practice

•After a high reading (>140/90) in office, the patient is encouraged to take home blood pressure measurements, after 7-day period a medical assistant will call the patient to check home readings.
•Per the new policy, if the readings remain high, the patient will be scheduled for a nurse visit, provider visit, or home health visit with qualified clinician using a digital service.
•Provide education to patients during nurse visits or provider visits regarding hypertension and treatments
•This group will be compared to the patient population without blood pressure follow-up prior to the introduction of the new policy.
•The outcome should show a decrease in uncontrolled hypertensive patients coming into the clinic.
•One of the low-level barriers and a factor in non-adherence to pharmacological treatment is not having adequate follow-up of the disease (Montealegre et al., 2022).

Conclusion

•Utilizing low-cost interventions to assist patients in controlling blood pressure could improve the mortality and morbidity experienced later in their lives.
•It can also decrease the burden on the healthcare system and resources.
•Primary care clinics can intervene using simple team-based approaches to monitor and treat uncontrolled hypertension patients in their care
•Suggest at least a year after implementation to evaluate results

Impact of Covid-19 Pandemic on Incidence of Complicated Appendicitis: A Retrospective Study

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Creighton University Department of Emergency Medicine; University of Arizona College of Medicine-Phoenix
Participating Site: Valleywise Health Medical Center

Creighton University | Arizona Health Education Alliance

Dignity Health. St. Joseph's Hospital and Medical Center | DMG District Medical Group | Valleywise Health

ABSTRACT

Purpose: The COVID-19 pandemic has posed new challenges at all levels of the healthcare system. In the state of Arizona, the stay-at-home orders were implemented on March 30th, 2020. Following this, there was suspension of nonemergent surgeries, and the public was advised to avoid the emergency department unless deemed necessary. The progression of acute appendicitis is time-sensitive and early presentation is critical to prevent complications such as perforation with peritonitis, abscess formation and phlegmon. The primary objective of this study is to compare the incidence of complicated appendicitis during the initial 6 months of the COVID-19 pandemic with prior years.

Methods: We performed a retrospective analysis of all patients who were treated for acute appendicitis during the initial COVID-19 era of March 30th -August 30th, 2020. Data was compared for the same time intervals of the 3 prior years and of the 36 months preceding the pandemic. We evaluated hospital length of stay, surgery times and return visits for all groups.

Results: The incidence of complicated appendicitis was 25% (21/85) during the COVID-19 era. Although this incidence was greater than the similar time intervals for 2019 and 2018 with 20% (20/98) and 16% (12/75) respectively, the 2017 time period had the highest complication rate of 35% (22/63). There was a shorter mean length of stay during the COVID era, but we found no significant difference in surgery times or total charges among the groups.

Conclusion: The incidence of complicated appendicitis during the early part of the COVID-19 pandemic increased when compared to the two previous years but was still lower than the 2017-time interval. During pandemics heath care providers should provide ongoing public information on why and how to seek timely medical care for potentially life-threatening conditions.

BACKGROUND

- Coronavirus-2019 pandemic changed the way medicine is being practiced
- Hospitals were forced to postpone elective surgeries, and many states implemented stay-at-home orders
- These changes triggered a reduction in the number of patients presenting to Emergency Departments
- Published reports have indicated a rise in delayed presentations of medical and surgical conditions [1-3]
- Acute appendicitis is a common surgical emergency that is not expected to resolve without medical or surgical intervention
- Several studies have shown a higher rate of perforation and longer duration of symptoms during the pandemic, while others actually found a decreased incidence of complicated appendicitis [1, 4, 5]
- The data is inconclusive and no association with morbidity has been adequately proven

RESEARCH QUESTION

Was the incidence of complicated appendicitis higher during the coronavirus-2019 pandemic when compared to pre-/post-pandemic time periods?

METHODS

- **Design:** Retrospective analysis of all patients (aged 0 months- 99 yrs) treated for acute appendicitis at either Maryvale or Valleywise Emergency Department during the COVID-19 era of March 30th - August 30th, 2020
  - Data compared for the same time intervals of the 3 prior years and of the 36 months preceding the pandemic to account for possible seasonal and annual fluctuations
  - Also evaluated secondary outcomes
  - Data, including demographic data, collected from Epic electronic medical records with chart review performed to fill in any missing information
  - *Exclusion criteria*: Patients who presented with 1) acute on chronic appendicitis, 2) post-operative complications of acute appendicitis, or 3) were transferred to another facility for management of acute appendicitis
  - *Primary outcome:* incidence of complicated acute appendicitis during the COVID era compared to prior years
  - *Secondary outcomes*:
    - length of stay
    - total surgical time
    - total hospital charges
- **Statistical analysis:**
  - Exploratory analysis to examine the incidence of uncomplicated and complicated acute appendicitis
  - Description of the baseline characteristics of the included sample
  - Chi squared test used to compare categorical data
  - Kruskal-Wallis test or Wilcoxon rank-sum test** used for continuous variables
  - P-value of 0.05 to determine significance

RESULTS

Table 1: Frequency of acute appendicitis in 3 time periods

Periods	Total cases of appendicitis	Avg cases per 30 day period
Post Covid Mar31-Aug31 2020	85	17.8
PrecovidMar31 2017-Mar31 2020	572	15.7
Precovid Ma 31-Aug31 2017	63	12.4
Precovid Mar31-Aug31 2018	75	14.7
Precovid Mar31-Aug31 2019	98	19.4

RESULTS

Table 2: Characteristic comparison of acute appendicitis in pre- and post- Covid era

	Post COVID Mar 31-Aug 31 2020	Pre Covid Mar 31 2017-Aug 2020	P-value
Total number of patients	85	572	-
Age at encounter	29	26	0.038
Mean Temp (F)	98.6	98.5	0.415
Mean HR	102	96	0.089
Hospital Length of Stay (mean hours)	36	40	0.418
Mean Hospital cost	43943	50178	<0.001

Table 3: Characteristic comparison of complicated appendicitis between post-Covid (2020) and prior 3 years

	Mar 31-Aug 31 2020	Mar 31-Aug 31 2019	Mar 31-Aug 31 2018	Mar 31-Aug 31 2017
Complicated appendicitis n/total patient (%)	21/86 (25%)	20/98 (20 %)	12/75 (16%)	22/63 (36%)
Mean Age , years (range)	31(8-69)	29(5-64)	21 (4-55)	24 (2-64)
Mean duration of symptoms, days	2.35	2.35	2.33	2.64
WBC count X10^3	13.9	13.8	15.3	16.4

Table 4: Secondary outcomes of complicated appendicitis comparing post-Covid (2020) to prior 3 years

Time interval of Mar 31-Aug 31	Hospital length of stay hrs (n)	P-value**	Surgery duration in hours (n)	P-value**	Average total hospital cost in USD, mean (median, range)	P-value**
2017	74	0.246	96	0.416	55845 (56647, 10968-96026)	0.483
2018	88	0.170	109	0.688	63234 (59777, 22028-134136)	0.329
2019	85	0.193	99	0.868	68015 (55587, 12326-195980)	0.643
2020	36	Ref	85	Ref	43944 (41731, 5213-157792)	Ref

DISCUSSION

- Our study found a higher incidence of complicated appendicitis during the pandemic compared to the prior two years. Explanations for the observed trend is multifactorial. Public fear about risking exposure to COVID-19 as well as hospital restrictions due to state-mandated lockdowns resulted in reduced access to health care
- Interestingly, hospital lengths of stay were significantly shorter during the pandemic. We postulate that patients were discharged sooner in order to assure adequate hospital resources for the very sick COVID patients
- Fluctuations in seasonal and annual incidence were controlled for by comparing to the same months in prior years, and preceding 30 months
- The population consisted of predominantly Hispanic patients which lessens cofounding among socio-cultural premises. However, due to limited diversity of the patients the results may not be generalizable to the entire US population
- Our study adds to the growing body of literature that suggests that the COVID-19 pandemic potentiated a delay of medical care which may be associated with worse clinical outcomes
- We are currently in the process of expanding this study to include the identical timeframes for the two years following the COVID-19 stay at home orders.

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The Impact of Wellness Events and Social Support on Reducing Burnout in Third Year Medical Students

Jeremy Winkelman, MS3; Judith Hunt, MD; Jonathan Cartsonis, MD
University of Arizona College of Medicine-Phoenix

Introduction

Burnout is a state of emotional, mental, and physical exhaustion that results from prolonged stress and demands on an individual. Medical students are particularly vulnerable to burnout due to the high-pressure environment of medical school. Burnout can have significant impacts on medical students. Burnout can lead to Impaired academic performance, emotional exhaustion, physical symptoms, decreased empathy, and increased risk of mental health issues[1]. One survey found that approximately 45.2% of third year medical students report some symptoms of burnout[2]. The Longitudinal Integrative Curriculum (LIC) places third year medical students in one setting, in this case Payson Arizona, for the majority of the required core clerkships. This project set out to determine if frequent wellness activities would decrease burnout among the LIC participants.

Payson Hike

Camping Trip

Materials and Methods

- LIC students were placed in Payson, Arizona for approximately 9 months to complete the core clerkships including internal medicine, family medicine, OBGYN, surgery, emergency medicine, and pediatrics in a longitudinal setting.
- Throughout these nine months, student wellness leaders prepared a variety of wellness activities, approximately one to two every month.
- These activities included group hikes, camping trips, painting nights, pizza parties, karaoke nights, attending the rodeo, line dancing, boardgame nights, and group dinners.
- A digital survey was sent out to LIC participants which asked them to compare their baseline burnout levels to their burnout levels after wellness activities.
- The scale used in the surveys was ranking burnout levels from 1-5, with 1 being the least amount burnt out, and 5 being the most.

Paint Night

Foosball

Board Game Party

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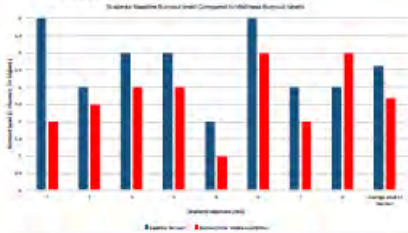
Results

- 8 students responded to the survey and rated both their baseline burnout level and burnout after wellness activities from 1 to 5
- The average baseline burnout level was 3.63, and the average post wellness burnout level decreased to 2.69



Discussion and Conclusions

- The survey results suggest that the introduction of wellness activities over the course of the third year of medical school reduced burnout.
- Every student, except for 1, reported that the activities reduced burnout to some degree, and overall it brought down burnout levels by 26%.
- This suggests all third-year programs should incorporate wellness activities to reduce burnout.
- Next steps of this project would be to expand the number of participants surveyed and to compare results to non-LIC students.

Title

Improving Outcomes in Primary Care
College of Health & Human Services
School of Nursing
Name Sandra Olson, MA, BSN, RN
Faculty Sponsor: Dr. Shelley Vaughn

Purpose of the Project

The purpose of this project is to show simple, existing, and accessible tools that can be used to increase treatment compliance and access to healthcare.

Problem

Medication and appointment adherence continues to be an obstacle in the delivery of healthcare.

Lack of a multi-dimensional approach will continue to yield interventions which do little to overcome barriers.

The problem of healthcare access is real.

Clinical Question

Can utilizing reasonable and available resources improve patient outcomes?

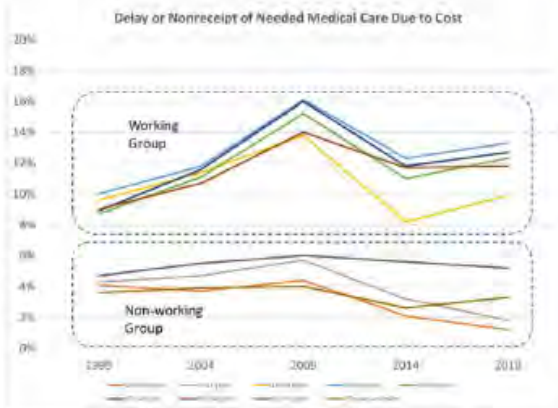
Review of the Literature

Depression, is a condition linked with less optimal outcomes in patients (Goldstein, et al., 2017).

Smartphones echo opportunities for utilization of health services (Khan & Khuso, 2018).

Telehealth is not being used ubiquitously (Kruse et al., 2020).

- CDC Data
  - Delay or nonreceipt of needed medical care, nonreceipt of needed prescription drugs, and nonreceipt of needed dental care during the past 12 months due to cost, by selected characteristics: United States, selected years 1997-2019 – suspect reliability of data
- Observation: Two Age Groups
  - Non-working age (very old / young)
  - Working age 18-64
- Inferences suggesting further studies
  - Non-working group: higher access
  - Working group: lower access
  - Least care coincident with economic crisis of 2009



Proposed Best Practice

Promoting the benefits of assessing patients for depression at every visit.

Providing education and support to bridge the technology gap and fully utilize all the benefits the impact on outcomes.

Advocating for the expansion of telehealth.

Conclusion

Assessing and treating for depression can help with treatment compliance

Studies have long shown that there is a strong correlation between mood and conviction related to adherence of treatment plans

Government subsidy has allowed for access to specialized technology and as cited in this project, the advent of such tools has proven to help with reminders for medication and appointments

Financial and work(?) challenges, certain disabilities and access to health care precludes many from being able to obtain care,expansion of telehealth might help

Inaugural AHEC Undergraduate Scholars Program

Goldsmith, P. MS, RN, PHNA-BC UA College of Nursing
Helm, D. RDH, MS, EdD NAU Department of Dental Hygiene

Background

Objective: This case study examined experiences with the first Arizona Area Health Education Centers (AHEC) Scholars Program for Undergraduates.

Background: Launched Fall 2021

Project Aim: To expose undergraduate students to rural and underserved communities in the 5 Regional Centers through interprofessional teams

Participants: N= 19
- UA—Nursing, Nutrition, Pre-med
- NAU—Dental Hygiene
- Students selected by their respective university mentor

Completion rates
- 12 completed the program
- 2 a leave of absence returning the following semester
- 7 withdrew
  - dropped out of academic program (1)
  - academic program demands (6)

Data Collection

- Anonymous end-of-the-semester surveys
- Observations by faculty mentors
- Team/Self evaluations
- Discussions with AHEC Regional Centers

Results

Successes

" I have a d different perspective on homeless people as well as refugees. I am very appreciative of the experiences I had with AHEC "

" I loved attending the AZMOM event again this semester. It is so impactful, and I hope it continues in the future.

- On-site immersions highlights
  - Flagstaff scavenger hunt
  - Visiting patients in skilled nursing facility
  - Touring New Leaf Homeless Shelter
  - Participating with grad scholars

"I absolutely loved getting an inside view in underserved communities because it made it more real to me. I appreciated the more hands-on events; they really helped me with my learning! "

- Community projects
  - El Rio Food distribution
  - Veterans Stand Down
- Flex activities
  - AZ Mission of Mercy
  - Casa Alita for asylum seekers
  - AZ Rural Health Conference
- Monthly Seminars
  - Working with the deaf community
  - Native American Zombie Apocalypse game

Flagstaff
Show Low
Lake Havasu City
Tucson
Phoenix

Helpful Tools

- Objectives guided activities
- Weekly emails & text reminders
- Regional Centers support
- Templates (poster, podium presentation, abstracts)
- Self/Peer evaluations

Challenges

- Virtual Annual Conference (vs in-person)
- Different academic calendars of 2 universities and 5 academic programs
- Scholars Work/Life balance
  - Rigor of the scholars' academic programs
  - Work demands
  - Time management skills of some undergraduate students
- COVID-19—restrictions, infections, vaccination status
- Long distance travel for immersions
- No Regional Center home
- Planning engaging virtual monthly seminars
- Keeping flex activities interprofessional

Conclusion Recommendations

The AHEC Scholars Program is a valuable opportunity to recruit undergraduate health professional students to work in medically underserved and rural communities through meaningful onsite immersions and interactive didactic experiences. Recommendations for the future include placing undergraduate scholars in teams with graduate scholars at one Regional Center.

Acknowledgments

- Our many guest speakers
- The curious scholars
- The Regional Centers
- AHEC office

An Introductory Guide to the Operating Room

THE UNIVERSITY OF ARIZONA COLLEGE OF MEDICINE PHOENIX

Colton Cowan, MS3; Judy Hunt, MD; Jonathan Cartsonis, MD
University of Arizona College of Medicine-Phoenix

Introduction

Working in an operating room is a fundamental aspect of medical training. However, for many medical students, their first experience in an operative setting doesn't come into their third year clerkship training. As a result, many report feeling underprepared for, and intimidated by, this experience. Likewise, medical personnel in ORs have reported that students often lack proper training in OR etiquette, scrubbing techniques, and awareness of proper sterile field maintenance[1]. In addition, early exposure to the operating room and better preparedness for this experience is associated with an increase in expressed interest in pursuing future careers in surgical subspecialities amongst medical students[2]. For this reason, we sought to create an written overview and interactive class to serve as a practical guide for young medical students and non-surgical hospital employees to be completed prior to entering an OR.

Abstract

Due to the rural nature of Payson, Arizona there is a need for professionals and students to be in an operating room, possibly scrubbed in, when they may never have previously done so. In order to help increase comfort of the individuals, as well as the safety of the patient, this project, in coordination with the surgeons and surgical technicians, created an orientation program for those new to an OR. Covering the basics from how to maintain surgical sterility, orientation to basic OR tools, and possible actions an individual new to an OR may be asked to perform. Because of the longitudinal interprofessional campus, this class is written up to be handed off to following classes. The guide was written for a target audience of MS1-MS3 medical students, either prior to shadowing experiences, or prior to surgical clerkships. Special emphasis was placed on outlining the specific expectations for students in the OR, such that students would feel more prepared for their unique role in this setting.

Core Tenants of Guide

- Cardinal rules
  - How to maintain of a sterile field
  - How to maintain personal safety and patient safety
  - How to prepare adequately for a case
- Setting up the patient
  - Emphasizes the unique expectations and responsibilities of the medical student
- How to scrub
  - How to scrub with proper technique and when to use different forms of sterilization
- How to glove and gown
  - How to maintain sterility during the gowning/gloving
  - Professional behavior towards colleagues in the OR, including scrub techs and nursing staff
- Etiquette
  - General dress code, ways to maintain sterility, and expectations for medical students
  - Definitions of common tools
  - Tips and tricks for success

Outcomes

Projected outcomes for this project will be measured via a survey distributed to MS3 students at the beginning of their clinical rotations, and at the end of their surgical clerkships. Objective measures of success will include:

- Subjective feelings of preparedness for OR experience
- Adequacy of knowledge of techniques such as scrubbing, gowning, and gloving
- Awareness of OR etiquette
- Enthusiasm for surgical specialties as a whole
- How likely students would be to recommend guide to others

Discussion and Conclusions

- Medical students often feel unprepared and intimidated by the operating room
- Medical staff in the OR reports that medical students often lack knowledge of fundamental etiquette and sterile techniques
- A comprehensive guide for medical students increases student confidence and success in their surgical clerkships

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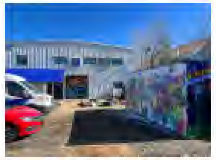
Mental Health Matters: Community Outreach Project

Adrian Acuna, Lidia Azurdia Sierra, Katherine Barlow, Marian Brock-Andersen, Karen Chan, Meagan Coomer, Deya Dewalt, Nicole Galvan, Nathan LeNguyen, Isabelle Lovato, Jalonna Ohr, Stephanie Qualman, Michele Roberts, Jenna Vasquez, and Maximilian Vuong

CAAHEC Central Arizona Area Health Education Center

INTRODUCTION

- Prescott is a small city located in Yavapai County
- Access to social services is limited and incidences of drug and alcohol abuse, paired with low health literacy, predisposes the community to deficits in seeking mental health care
- Community programs work hard to ensure access to services but have many unfilled needs and barriers continue to exist
- Lack of access sparked the idea of offering mental health resources as provided in the created website
- Local areas where teens frequent offer an ideal site to distribute resources to connect the community to online mental health resources



The Launch Pad Teen Center

WEBSITE QR CODE

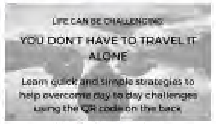
PURPOSE

- Identify the needs of adolescents in Prescott and surrounding communities
- Identify mental health awareness and resources to develop a website that connects adolescents to age appropriate mental health resources

THE UNIVERSITY OF ARIZONA Arizona AHEC Area Health Education Centers

METHOD

- 15 Scholars from all three state universities
- Windshield survey conducted in first year of program and this revealed lack of access to mental health resources for the pediatric population
- Met with Joe Donaldson, School Psychologist in Yavapai County for expertise and thoughts
- Mental health awareness website created and materials with unique QR code ordered
- Meeting held with superintendents of Yavapai County to stress importance and deliver resources
- Distributed posters and wallet cards to numerous coffee shops, libraries, The Launch Pad Teen Center, Local Farmers' Market, The YMCA, and other areas that are highly frequented by teens
- Conducted 2-week follow up with businesses that posted and distributed materials



Wallet Card distributed, front

Wallet Card distributed, back

Poster distributed

FINDINGS

- The research and data gathered from the community identified teen mental health resources as a high impact outreach effort
- Our community partner advised that the county school system has experienced 5 completed suicides by students in the last year.
- The subsequent announcement that Arizona has eliminated social emotional learning programs in schools makes this intervention imperative, as social emotional learning is known to reduce emotional stress, depression, and anxiety (Arizona Department of Education, 2022; Kunichoff, 2023)
- Phone use among teens has been seen to be as high as 93%. Providing digital media for this age group was the most effective (Schaeffer, 2019)
- Arizona Department of Health Services reported a suicide fatality rate of 36.1 per 100,000 for individuals ages 0-24 in Yavapai county from 2019-2022, as compared to Maricopa County where the rate was significantly lower at 20.9 for the same range (AZDHS).
- A total of 1,000 cards and 100 posters were given and posted at target age appropriate businesses:
  - Prescott YMCA
  - Launch Pad Teen Center
  - Farmers Market
  - Public Library
  - PASS Shelter
  - Kayla's Hands Playground
  - Gripstone Climbing and Cafe
  - Skate Park
  - Get Air Trampoline Park
  - GameOn Game Store
  - Yavapai College Prescott Campus
  - Prescott Valley: InTheGame, Antelope Lanes Bowling Alley, Public Library
  - Courthouse Square: Starbucks, Pralines, Lone Spur, Raven Cafe, Whiskey Row Ice Cream, The Porch, Bill's Pizza, Marino's Mob Burgers & Ice Cream, The County Seat, Trax Records, Vibes Juice Bar, Fite and Sons Mercantile and Olde World Bakery

OUTCOMES

Strengths

- QR code allows for easy access of mental health resources
- Vetted social media links target the adolescent population in a format that they respond to
- Resources include peers addressing mental health issues, making the content relatable and timely for teens
- Multiple learning modalities reach all teens

Weaknesses

- Limited information on how often the website analytics
- Unable to reach all locations for follow-up on how resources have been received

Opportunities

- Project could serve as a legacy project for other AHEC cohorts
- Additional content can be added and migrated into a professional website with better analytics and tools to improve consumer interactions
- Publishing in a professional journal could disseminate the evidence of this project and improve the mental health of teens all over the United States

CONCLUSIONS

- Addressing mental health concerns in teens is a priority that deserves amplification
- Offering mental health resources in a modality that appears to teens improves engagement
- Providing materials in small communities that suffer from provider shortages fills a gap in access to mental health resources
- This project is feasible and can easily be integrated into all rural communities

ACKNOWLEDGEMENTS

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The Payson Christian Clinic and the Warming Center: Bringing care to where its needed

Colton Cowan, MS3; Judith Hunt, MD; Jonathan Cartsonis, MD
University of Arizona College of Medicine-Phoenix

Introduction to the Warming Center

Payson Arizona is situated in the middle of the tonto national forest with a total population of 15.7k an average income of $55,000 per household. It is also home to an estimated 2,200 individuals struggling with homelessness and living in the forest surrounding Payson. The Warming Center is an organization that offers a hot meal, hot shower, clothes, and connections to aid. Additionally, in the winter when temperatures become freezing the Warming Center utilizes its bunkhouse to allow those interested a night out of the elements. Originally started with a vision to help the large population of veterans, the warming center has expanded their scope to any individual or family that arrives.

Introduction to the Payson Christian Clinic

The Payson Christian Clinic was started by three local doctors In response to the growing numbers of uninsured in northern Gila County. Working with medical and health students the clinic provides care to anyone who arrives Any one who arrives uninsured and underinsured. By doing so it allows for a healthier community as everyone now has access to Everyone,regardless of insurance, has access to preventive and chronic care.

Mission for the clinic

Our mission was to establish a medical presence at the Warming Center in cooperation with the Payson Christian Clinic In so doing, Interprofessional longitudinal students are the continuity for these individuals within the health care system, in many cases being able to follow them to their primary care visits or to the ER in emergencies. Because of the longitudinal interprofessional campus, the project will be continually handed off to the following class members. Building continual trust and relationships between the community and those in healthcare.

Services provided

The clinic at the Warming Center allows medical and other health profession students provide general health screenings to attendees of the Warming Center. The longitudinal students assist with insurance difficulties such as applying for AHCCCS, checking status, and assisting in the establishment of a primary care provider for individuals and families. For those that do not qualify for AHCCCS patients may be referred to the Christian clinic for more long-term care. In cooperation with attending at the Payson Christian Clinic, telemedicine appointments may be performed at the Warming Center for non-emergent basic medical care

Outcomes

Success will be measured via surveys distributed to medical students participating in this project; metrics will include:

- Subjective satisfaction with the experience
- Perception of practical skills and knowledge gained through experience
- Confidence in patient interactions gained for future career
- Importance of experience in shaping future specialty goals

In addition, demographic data of patients will be collected to better identify needs in the community. Data such as:

- Insurance status prior to encounter
- If patient has an established primary care physician (PCP)
- Last time patient visited PCP.
- If not within 2 years, what reason is keeping them from seeing PCP.

Practice-Based Research & QI to Improve Rural Health

Christy Pacheco, DNP, FNP-BC, *University of Arizona College of Nursing*

Overview

Role of practice-based research, QI

Opportunity for health professions students to participate in or conduct clinical site-specific projects, impacting:

Workforce development

- Statewide and national workforce shortages across multiple disciplines[1]
- Training health professions students is a critical part of workforce development
- Participation shown to impact recruitment and retention[2]

Interprofessional collaboration

- Engagement of preceptors and stakeholders in professional development

Improving outcomes

- Projects may improve quality or access to care, with minimal site resources.

Consider the Quadruple Aim[3]

* Source: Bodenheimer & Sinsky, From Triple to Quadruple Aim, 2014

Practice-Based Projects

Plan-Do-Study-Act (PDSA) Model[4]

Academic Resources

- Health professions students frequently have opportunity to participate in or conduct projects at clinical sites.
- Doctor of Nursing Practice (DNP) NP student requirement

Practice Benefits

- Opportunity for professional development, improve patient care

Maximize academic resources of doctoral programs for design, implementation

Quality Improvement vs Research

- QI tailored to needs of site, resources
- Ask and answer locally clinically relevant question
- Systems approach
- Design for site feasibility, sustainability

Process

Collaboration

- Engagement of site stakeholders
- ID problem and project purpose
- Project Design

Preceptor role

- Consultant
- Member, Doctoral Committee

Approvals

- Site approval for project
- University IRB – ensure human subjects protection

Implementation

- Tailored to site, considering feasibility, sustainabili

Dissemination

- Executive summary of findings and future recommendations provided to site

Project Examples

Provider education - Evidence-based practice

- Chronic disease management, Mental health
- Advance directives
- Implement screening tools - depression, sleep apn

Patient education - tools

- Chronic disease management – DM, HTN
- Prevention

Program evaluation

- Transitional care, telehealth programs

References available upon re

Practicing Leadership Skills: Teaching Leadership Excellence for Advanced Practice Nursing

Patricia Daly, Ph.D., FNP-BC, ENP-BC, FAANP

Purpose

To measure the effectiveness of the Leadership Excellence for Advanced Practice Nursing (LEAP) Nursing Project a scenario-based educational module to foster leader-ready skills for advancing holistic, person-centric care for Advanced Practice Nursing students (APNs)

Background

- Increased public demand for holistic health care poises APN to be critical clinical leaders
- Novice health care APN need preparation to lead in systems traditionally functioning in a medical diagnostic-focused model.
- Currently leadership courses focus on theory applied in written form lacing opportunities to practice (rehearse) patient-centric interprofessional leadership skills

Preliminary data:

4 cohorts of students successfully completed clinical leadership scenario based educational module and an anonymous survey

All cohorts >75% of students provided ratings on Likert-type scales and with short answers. On 4-point scale, students rated the experience as 3.9 or higher for all items including comments such as:

"with real life application, I learned how important inter-professional communication is and that there are many other people that are experts in their field"

Theoretical Framework

The Information Motivation Behavioral Skills Theory (IMB)

IMB theory purports skill practice as an equally essential component of desired behavior change as information and motivation supporting APNs practicing leadership behavioral skills in a clinical conflict scenario may increase clinical leadership confidence.

Proposed Methods

Following preparation with role-specific evidence-based readings, fifteen APN students will voluntarily participate in an in-virtual clinical patient conference designed to create conflict. Roles will include patient/patient family, PharmD, physician, case worker, office manager. No student will be designated as the APN leader, instead this role will be intermittently assigned to each student when conflict arises.

- **Information**: role description supported with current evidence-based literature.
- **Motivation** enhanced with self-exploration leadership styles
- **Behavioral skills** acquired as participants practice actively resolving conflicts during the session.

IRB consented participants' responses with a post/pre-survey of leadership confidence and a structure interview.

Implications

- Implementing a theory-guided LEAP education model may be both feasible and effective in improving the leadership potential of novice APNs supporting translation of research into practice

References

Promoting Annual Diabetic Retinopathy Screening in Rural Clinics

College of Health & Human Services
School of Nursing
Ryan Mette
Faculty Sponsor: Dr Shelley Vaughn

Purpose of the Project

To promote patient education on the importance of annual Diabetic Retinopathy (DR) screenings for Diabetic patients.

Problem

Despite the availability and ease of getting screened for DR, many Diabetic patients will get some form of DR. Annual screening is the best preventive measure for Diabetic blindness. It is estimated that 1 in 15 Diabetics will become blind from DR. The average compliance rate for DR screening is roughly 60% per year (Hudson et al., 2022).

Setting

Family Practice clinics in rural communities

Clinical Question

Patient/Population: Diabetic Patients that currently seek medical care at participating study clinic
Intervention: Referral to an ophthalmologist for comprehensive DR evaluation
Comparison: Other clinics participating in STAR scores of United Health and Medicare
Outcome: Improvement in STARs scores for DR screening. Currently, the clinic has a 1 STAR rating for this category.

Patient Population

Type I and Type II Diabetics of all ages, ethnicities, and gender

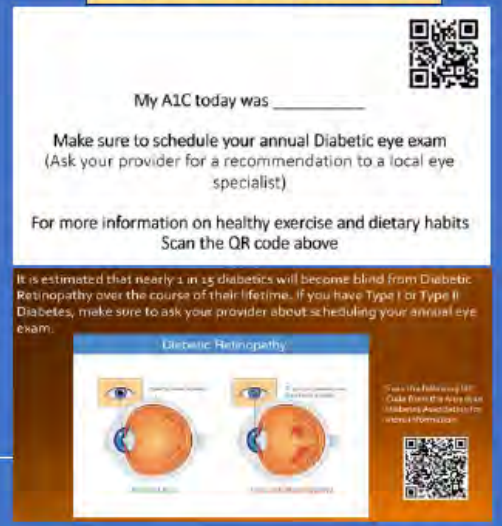
Review of the Literature

A total of 7 articles (published between 2017 to 2021) were reviewed for this project, consisting of over 5,000 participating patients and various studies that included: systematic reviews, mixed methods studies, qualitative studies, and cross sectional studies.

Proposed Best Practice

- Initiate email campaigns to address patient-specific disease processes with a short questionnaire about DR screenings (Beaser et al., 2018)
- Posters reminding patients to get an annual DR screening in each exam room (Kollipara et al., 2020)
- Post-It notes with patient's current A1C, a reminder to get DR screening, and QR code link
- Promote annual Diabetic educational sessions at the clinic (November is Diabetes month)
- Invest in a high-resolution ophthalmic camera- which images can be read remotely at a small price by licensed ophthalmologists

Implemented Interventions



Conclusion

- The average compliance rate nationally for DR screening is roughly 60%
- The use of in-clinic DR screening tools will provide the best annual DR screening compliance rates
- New technological advancements indicate that Artificial Intelligence is an efficient means for diagnosing DR with high specificity rates and can be performed remotely.
- Targeted DR screening objectives can increase compliance rates.
- Ongoing educational campaigns can increase compliance rates and improve overall health and well-being.

Providing culturally competent care in a gender affirming environment to reduce healthcare disparities

College of Health & Human Services

School of Nursing

Kara Everhart BSN, RN

Faculty Sponsor: Professor Terry Smith MSN, FNP

PROJECT

Transgender patients are a medically underserved population with a need for culturally competent healthcare providers that provide a gender affirming environment in which to receive care. The goal of this project is to educate healthcare providers and staff on how to bridge healthcare disparities by creating a gender affirming environment for transgender patients through proper use of terminology, professional interaction, and knowledge of transgender care.

SETTING & POPULATION

- Setting: Primary care providers and staff.
- Location: Rural Primary Care Clinic in Payson, Arizona.

PICO

P: Healthcare providers in the primary care setting.

I: Provision of culturally competent care in a gender affirming environment.

C: Healthcare providers who do not provide healthcare in a culturally competent and gender affirming environment.

O: More equitable healthcare for transgender patients resulting in a reduction in healthcare disparities for this population.

Reasons for Transgender or Gender Nonconforming Nonuse of U.S. Emergency Departments

Conceptual frame (n=35), a % (a)	Reason	Frequency
Personal	Lack of medical insurance	31.4 (11)
	Fear of being outed, misgendered, or experiencing discrimination	60 (21)
Provider behavior	Past witnessing of medical personnel gossiping, mocking, or telling jokes about the TGGNC patients	45.7 (16)
	Past experience with visibly uncomfortable providers and/or being asked inappropriate questions	34.3 (12)
	Past experience of transphobia as a patient	37.1 (13)
Systems issues	Medical facilities are unable to provide accommodations for TGGNC patients	42.9 (15)
	Providers are poorly educated in TGGNC health-related issues	40 (14)

Retrieved from: https://doi.org/10.1089/lrgh.2016.0026

REVIEW OF LITERATURE

- Articles reviewed for this project: Level I & III on the evidence table.
- Publication dates: 2018 to present.

Key Points:

- Transgender patients feel it is not their responsibility to educate providers about their care.
- A study conducted by Mayo Clinic found that only 46% of providers had discussed fertility options with transgender patients before starting them on hormones.
- Transgender patients not on gender affirming therapy have a fourfold increased rate of depression compared to their peer group on gender affirming therapy. Screen for depression as a standard of care.
- Providers that do not provide gender affirming treatments, should refer the patient to providers that can.

Retrieved from: https://www.hopkinsmedicine.org/news/publications/hopkins_medicine_magazine/working_the_dome/spring-summer-2017/re

PROBLEM

- A study conducted on 27,715 patients from 2010 to 2015 found little had been done to improve access to healthcare for this population. 33% had a negative experience with a primary care provider related to being transgender. 23% avoiding seeing a primary care provider for fear of mistreatment. Other reasons for avoidance of healthcare: intrusive questions, refusal of care, or harassment.
- According to a survey in 2018, a large percentage of providers admit to lacking the knowledge on how to care for this population and support for these patients is not universal.
- This population has an 82% suicidal ideation rate with a 40% attempt rate. That is nine times as high as the general population.

RECOMMENDATIONS

- Avoid the terms well women exam or women's health.
- Use the term family planning instead of pregnancy.
- Take responsibility to become educated on transgender care.
- Use gender neutral intake forms.
- Use chosen name and pronouns. Avoid the term "preferred" pronouns. Pronouns should not be treated as negotiable.
- Share your pronouns first, to advertise the patient is safe if they choose to disclose their gender identity & pronouns.
- Explain what procedures are being done & why they are necessary.
- Do not ask unnecessary questions to satisfy your own curiosity.
- Never make assumptions, ask the patient directly.
- Offer preventative screening based on organ inventory.
- Ask or use the terms the patient uses to describe their body parts.
- If the incorrect pronoun is used, apologize, and move forward. Do not over apologize or make excuses.
- Focus on health & well-being. Gender dysphoria is not always present.
- Transgender patients are concerned about their sexual pleasure. Address sexual health. Knowing the patient's sexual practices and anatomical function are an integral part of that.
- Ask broad questions: Tell me about the gender of your sex partners.

TERMINOLOGY

Gender affirmation: Accepting and supporting an individual's gender identity.

Gender dysphoria: DSM-5 diagnosis assigned to provide gender affirming treatment.

Discomfort is the issue not identity.

CONCLUSION

Implementation of these best practices will be a step towards bridging the healthcare gap for transgender patients living in Payson, Arizona. A pre and post presentation questionnaire was provided to the staff to determine if this presentation provided needed resources to better care for transgender patients. 100% of staff feel better prepared to care for these patients.

REFERENCES

NORTHERN ARIZONA UNIVERSITY

Risk Stratified Bladder Cancer Screening in Primary Care

College of Health & Human Services
School of Nursing
Mary Vejnoska
Faculty Sponsor: Shelley Vaughn, DNP, FNP-BC

Purpose of the Project

Project Purpose

To develop a standardized, risk-based screen for bladder cancer that providers can easily utilize and integrate into practice. This results in earlier malignancy detection, reduced cancer related morbidity, mortality, and improved patient quality of life.

Problem

- Bladder cancer is 5th most common cancer in U.S., highest rates among white males
  - African Americans/Hispanics diagnosed with bladder cancer have advanced stages
  - Poor outcomes
  - Higher mortality rates
- Providers fail to utilize easily accessible bladder cancer screens for appropriate patients
  - Low risk patients are inappropriately screened
  - High risk patients are missed
- Recognizing Red Flag Bladder Symptoms
  - Results in earlier diagnosis
  - Non-invasive muscle bladder cancer
- Provider's job is to identify patients that warrant screening
  - NOT all patients should be
  - Some risk factors are not easily identifiable is often associated together

Setting & Patient Population

Patient Population and Setting

- Low-income population
- Serving minority races/ethnicities
- A clinic in South Phoenix, Arizona
- Patients at low, intermediate, or high risk of bladder cancer
- Patients with risk factors that can benefit from further workup/screening

Clinical Question

In patients at moderate-to high-risk for developing bladder cancer in a low-income, primary care clinic in South Phoenix (P), will providing education and supplying providers with a risk factor identification tool (I) increase the number of high-risk patients identified and appropriately screened (O) during the first 3 months post-education (T).

Review of the Literature

Lack of bladder cancer screening and surveillance guidelines for any population, low-high risk

- Cochrane review unable to make a recommendation based on inability to find evidence and studies on topic

According to a combination of retrospective and prospective cohort studies (some randomized) and two mixed-methods studies:

Providers are inconsistent in screening practices

- No standard practice identified for patient evaluation
- Unnecessary screening of inappropriate lower-risk patients
- Higher unnecessary diagnostic and procedural burdens
- Increased patient harm, healthcare, and patient costs
- Missed bladder cancer cases in high-risk patients, especially of early-stage cancers
- More negative outcomes and long term adverse effects; missed cancer caught in later stages

Review of the Literature Cont.

- In a cohort study of 1049 patients, a risk-stratified screening approach led to:
  - Decrease in workup/care-related costs by $166,252, when low-risk patients not screened
  - Reduced costs of finding high-grade cancers from $136,125.3 to $55,417.3
  - Low-risk patients not screened without significant cancers/lesions missed
- Patients experience significant delays in evaluation for diagnosis/treatment of bladder cancer
  - 18% of patients presenting with symptoms of bladder cancer have an average of 3 or more provider visits before diagnosis is ever made
  - More delays experienced by women
- 75% of low-risk patients undergo more invasive diagnostic procedures than recommended or necessary

Proposed Best Practice

- Identification and adoption of a risk-stratified bladder cancer screen in Primary Care
- Utilization of EHR for screening forms with risk-based factors
- Educating providers on the significance of Bladder Cancer Screening tool and integrating into practice
- Obtain and utilize feedback for process improvement
- Evaluate short-term and long-term outcomes

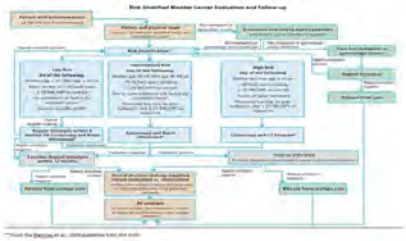
Conclusion

- Bladder cancer has a five-year survival rate of 80%
- However negative health outcomes and lifelong impairments often result as recurrence is very common
  - Patients diagnosed with bladder cancer have the highest lifetime medical cost per person out of ALL cancers
  - Screening tools offer easy recognition of factors and findings that together indicate higher risks
  - This offers an efficient, step-by-step guide for patient evaluation
  - Implementing a risk stratified bladder cancer screening tool into practice would result in earlier cancer detection, reduction in low-risk patients unnecessarily and inappropriately screened, reduced healthcare costs, decreased patient burdens, and improved patient outcomes for all risk levels

References

Algorithm & Staff Education Handout

ALGORITHM BLADDER CANCER



Screening for Depression in Primary Care

College of Health & Human Services
School of Nursing
Jocelyn Noriega BSN, RN
Faculty Sponsor: Shelley Vaughn, DNP, FNP-BC

Purpose of the Project

The significance to primary care is to bring awareness of depression and the need to mandate screening for depression and mental illness in primary care at every visit.

Problem

- The depression screening tools are often being missed by the medical assistants when rooming patients leaving the patient vulnerable.
- Primary care providers having to diagnosis and treat mental health issues because of the shortage in behavioral health services in rural areas.
- Mental health crisis has tremendously increased since COVID-19
- It is only being done 63% of the time in my current primary care practice.
- Patients are being missed and going undiagnosed and untreated.

Setting

Primary Care Office

Patient Population

Adult patients 18 to 65 years old

Clinical Question

Do adult patients that come into the primary care office who answer the depression screenings have better outcomes with diagnosis and treatment compared to those who receive standard care and decline or get missed during the COVID-19 pandemic and how this affects their mental health within the next year.

Review of the Literature

- Costantini et al., (2021) explain in a systematic review that depression is a leading cause of disability worldwide.
- Costantini et al., (2021) found that the reliability PHQ-9 has is a primary screening tool and can be used worldwide to identify patients that may be displaying some depression without directly coming saying it.

Proposed Best Practice

- Identify problems with questionnaire
- Educating medical assistant staff to do PHQ-2 or PHQ-9 at check in
-Caring for the patient in an entirety.
-Not treating just the common chronic illness

Conclusion

- 37% of patients were already taking antidepressants or seeing a counselor.
- 32% of patients scored mild to no depression from the PHQ-2 and PHQ-9 questionnaire..
- 22% of patients scored moderate to severe on the PHQ-9. Of these patients, 7 patients scored a 10 or greater on the PHQ-9 and were not offered any treatment.
- 5 patients were offered intervention, but no data was included because of time frame.
- Lastly, out of the 72 charts reviewed the 18 patients that were offered intervention and 100% of them showed lower PHQ-9 scores in subsequent follow up appointments.

Serum Lactate as A Prognostic Indicator of Injury Severity in Pediatric Trauma Patients: A Decade Long Review

Shailesh Khetarpal MD, Eric Jackson BS, Colin Hurkett BS, Katherine Barlow BS, Zola Trotter MD, Kevin Foster MD,

The University of Arizona College of Medicine - Phoenix

Medicine Phoenix

Introduction

Lactic Acid in Trauma

Prior studies in adult trauma victims have indicated that an elevated serum lactate level immediately post-injury, is associated with morbidity and mortality. Serum lactic acid levels have also been found to be superior than base deficit as a biological variable in scoring systems built to assess the initial severity of injury in adult trauma patients (1)

However, there are few comparable studies in children. Lawton et al. performed a systematic literature review on the role of lactate in pediatric trauma, of the 63 papers initially identified and reviewed only one was in a child cohort and showed that an elevated lactate level was correlated with injury severity, length of stay, morbidity, and mortality (2). A prospective study by Ramanathan et al done over a period of 24 months in 2015 showed that a lactate of over 4.7mmol/L was strongly suggestive of severe injury in children, while lactate below 2.0 mml/L is reassuring for not having serious injury. Lactates between 2.0 and 4.7 mmol/L remain indeterminate in predictive potential for injury or outcomes (3). Although physiologic mechanisms in response to traumatic injuries may differ in children, the literature in this topic remains scant.

Trauma activation level is determined by pre-hospital criteria. The American College of Surgeons (ACS) recommends trauma activation criteria; however, their accuracy may be limited. Pre-hospital lactate (LAC) has shown promise in predicting trauma center resource requirements. The study by Brown 4 et al found the ACS+LAC algorithm reclassified patients to more appropriate levels of trauma activation when compared to the ACS algorithm alone (4).

Role of Lactate in Pediatrics

In a prospective study in pediatric trauma patients, Shah et al (5) examined the diagnostic accuracy of a single point-of-care pre-hospital serum lactate for predicting outcomes. The authors found that pre-hospital lactate level was higher in pediatric trauma patients who required critical care, including those who had normal pre-hospital vital signs and Glasgow Coma Scale (GCS).

The role of elevated initial lactate in pediatric trauma is helpful when there are severe injuries but lacks sensitivity and specificity for mild to moderate level of injury. Valleywise Health Medical Center is level 1 adult trauma and routinely screens trauma patients for lactate as part of the initial trauma labs including that for children.

Goals

1. The primary objective is to study if the serum lactate level on presentation in pediatric trauma patients is predictive of clinical outcomes including need for surgical intervention, length of hospitalization and ICU stays, discharge or death.
2. To study the relationship between serum lactate level at presentation and trauma injury severity Injury Severity Score (ISS), and Glasgow Coma Score (GCS).
3. To study the relationship between serum lactate level at presentation and other demographic (age, gender, race/ethnicity) and clinical variables (injury mechanism, trauma characteristics, pre-hospital time, imaging studies, disposition, laboratory studies).

Methods

566 pediatric patients aged 0-18 years who presented to the Emergency Department (ED) for trauma activations were enrolled retrospectively over a 10- year period (June,2010-May 2020). Data collected included demographics (age, gender, race/ethnicity), admission serum lactate, injury mechanism, trauma characteristics, Injury Severity Score, Glasgow Coma Score, mortality, length of stay, need for Intensive Care Unit (ICU) stay, mechanical ventilation, final diagnosis, and disposition. Admission lactate levels were stratified as high if meeting the threshold value of 4.7 mmol/L. This threshold value was derived from previous evidence that lactate levels above 4.7 mmol/L were associated with poor outcomes.

n = 566

		Count	Percent of Total
Disposition	Floor	215	37.99
	Observation	184	32.51
	Home or Self Care	114	20.14
	OR	48	8.48
	Court/Law Enforceme	2	0.35
	SICU	2	0.35
	ICU	1	0.18
LOS 2 days or more?	LOS 0-1day	320	56.54
	LOS 2+days	246	43.46
Outcome	Survived	555	98.06
	Deceased	11	1.94
Age Group	Age 15-<18	257	45.41
	Age 6-15	224	39.58
	Age 2-5	60	10.60
	Age < 2yr	25	4.42
Emergent blood required	No	533	94.17
	Yes	33	5.83
Emergent procedure required	No	534	94.35
	Yes	32	5.65
Serum lactate 4.8 mmol/L or high	Lactate<4.8	542	95.76
	Lactate 4.8+	24	4.24

Table 1: Patient Demographics

Outcomes

Table 2: Relationship of lactate to hospital outcomes.

Correlation with serum lactate	Correlation coefficient	P*
Co2 level	-0.12913	0.0022
GCS	-0.13433	0.0014
ISS	0.13018	0.0023
LOS	0.07013	0.0956
Age, year	-0.04241	0.3139

P-value may be significant, but the magnitude of correlation is weak.

Table 3: Relationship of lactate to Secondary Objectives

Discussion

Preliminary findings suggest that high admission serum lactate was strongly correlated with death during hospitalization, required emergency procedures, and emergency blood required. There was a significant p-value but weak correlation with high serum lactate and GCS, ISS< and CO2 levels. This suggests that serum lactate may be a useful indicator of severity in pediatric trauma. This may be particularly useful in a resource limited setting due to the affordability of the lab draw.